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ABSTRACT

This study documents land ownership patterns in the Appalachian region and analyzes their impact on rural communities. Representing the most comprehensive such study to date, the project was initiated by Appalachian residents in 1978 to examine whether and how land ownership patterns, especially corporate and absentee ownership, underlie or contribute to policy issues the region faces. The study surveyed 80 counties in 6 states: Alabama; Kentucky; North Carolina; Tennessee; Virginia; and West Virginia. In general, the study found ownership of land and minerals in rural Appalachia to be highly concentrated among a few absentee and corporate owners, resulting in little land actually being available or accessible to local people. These ownership patterns are a key underlying element in explaining inadequate local tax revenues and services, lack of economic development, loss of agricultural lands, lack of sufficient housing, education, energy development, and land use in the region. A listing of chapter headings follows: (1) "Land Ownership: A National Issue, and an Appalachian Issue"; (2) "Who Owns the Land and Minerals? A Profile of Ownership Patterns in 80 Appalachian Counties"; (3) "Property Tax Patterns in Rural Appalachia"; (4) "Land Ownership and Economic Development"; (5) "Land Ownership and Agriculture"; (6) "Land Ownership and Housing"; (7) "Ownership, Energy, and the Land in Appalachia"; and (8) "Findings and Recommendations." The appendixes include the methodology of the land study, and a 38-page annotated bibliography. The document includes tables showing land and mineral ownership patterns in Appalachian counties, land-owner characteristics, property tax patterns, and land use patterns. (TES)

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LAND OWNERSHIP PATTERNS
AND THEIR
IMPACTS ON APPALACHIAN COMMUNITIES

A Survey of 80 Counties

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As Submitted to the
Appalachian Regional Commission
By the
Appalachian Land Ownership Task Force
February 1981

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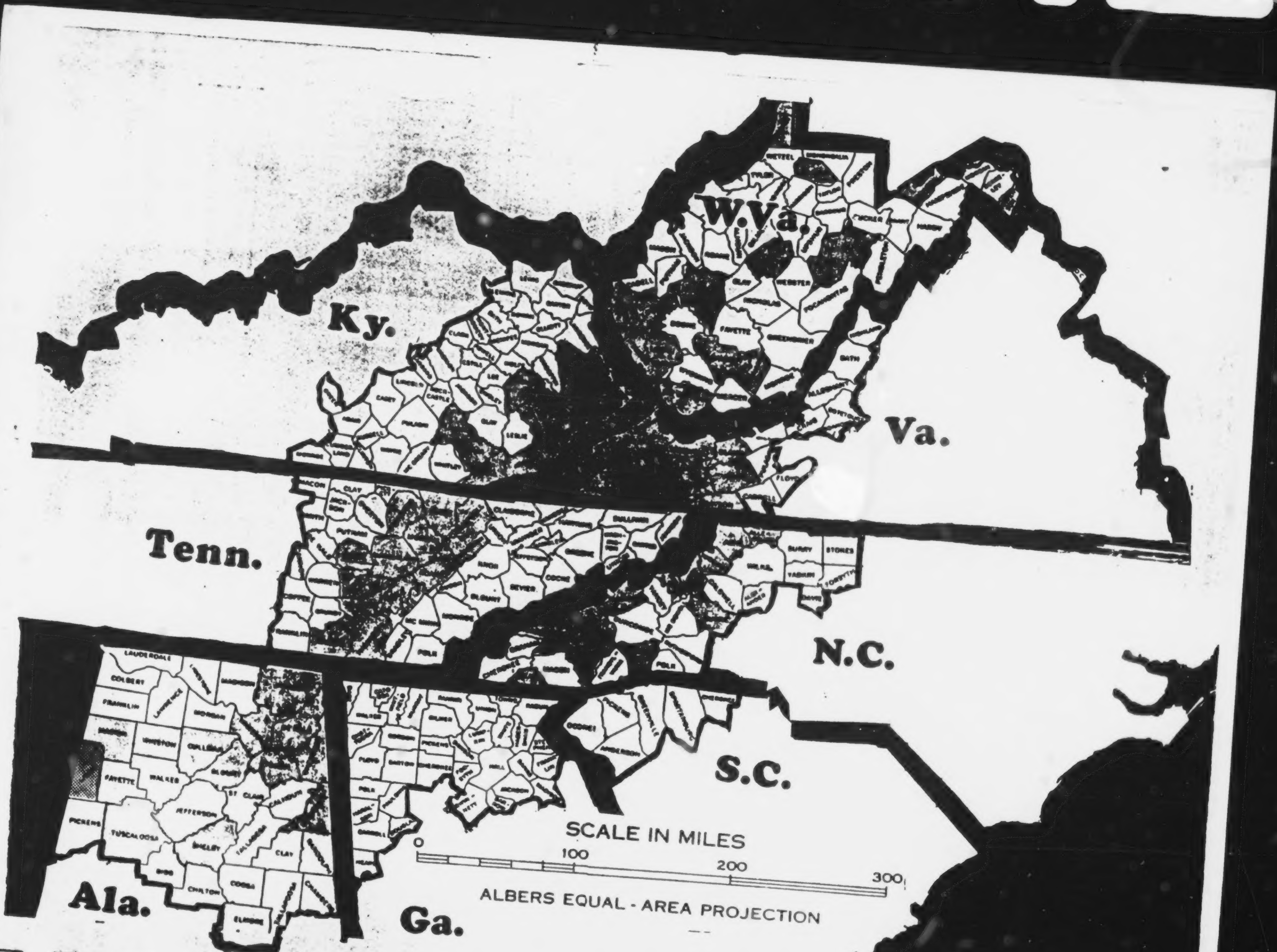
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SUMMARY: LAND OWNERSHIP PATTERNS AND THEIR IMPACTS ON APPALACHIAN COMMUNITIES

A Study by the Appalachian Land Ownership Task Force, 1981

This study is an attempt to document land ownership patterns in the Appalachian region and to analyze their impact on rural communities. Representing the most comprehensive such study to date, the project was initiated by residents of the region in fall 1978, to examine whether and how land ownership patterns- - especially corporate and absentee ownership - - underlie or contribute to many of the policy issues that the region faces: property taxes for local services, continued economic underdevelopment, loss of farmland, inadequate housing, energy production, environmental damage.

Conducted by the Appalachian Land Ownership Task Force, a coalition of community groups, scholars and individuals, associated with the Appalachian Alliance, the study has involved the work of some sixty people in six states. With county tax rolls as a data base, over 55,000 parcels of property in 80 counties were studied, representing some 20,000,000 acres of land and mineral rights in parts of Alabama, Kentucky, North Carolina, Tennessee, Virginia and West Virginia. In addition, over 100 ecomonic and social variables were compiled for the counties surveyed, in-depth county case studies were conducted in 19 counties, and state reports were prepared for each of the states.

The findings of this study are presented in a regional overview, and six supporting volumes of state and local material, altogether amounting to over 1800 pages. A brief summary of the regional overview is found below.

LAND OWNERSHIP PATTERNS

In general the study found ownership of land and minerals in rural Appalachia to be highly concentrated among a few absentee and corporate owners, resulting in little land actually being available or accessible to local people.

1. The ownership of land and minerals in Appalachia is highly concentrated in the hands of a few owners. Only 1 percent of the local population, along with absentee holders, corporations, and government agencies, control at least 53 percent of the total land surface in the 80 counties.* Forty-one percent of the 20 million acres of land and minerals owned by 30,000 owners in the survey are held by only 50 private owners and 10 government agencies. The federal government is the single largest owner in Appalachia, holding over 2 million acres.

---

* Using 1978/1979 property tax records, the survey recorded all local individual owners with holdings above 250 acres (representing 1% of the local population) and all corporate, public and absentee owners with holdings above 20 acres in the unincorporated portions of the counties. The survey covered 53% of the total surface of the 80 counties. Percentages are based either on the total land in the counties or on the total land recorded in the survey (specified in each case).

ACKNOWLEDGEMENTS

This study benefitted greatly from the participation of people throughout the Appalachian region, who together planned, conducted and produced the study. A Regional Task Force, associated with the Appalachian Alliance, gave direction to the overall project. A regional staff, working from the Appalachian Studies Center, Boone, North Carolina, and the Highlander Research and Education Center, New Market, Tennessee, prepared the regional report, coordinated the research, and produced the study. State teams, many of whom volunteered their services, and state coordinators, did the planning, research, analysis and writing for each state. Without the interest and commitment of these numerous participants, the project neither would have been begun--nor completed.

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CHAPTER I: LAND OWNERSHIP AS A NATIONAL ISSUE, AND AS AN APPALACHIAN ISSUE

In a rural area, land joins capital, labor and technology as a crucial ingredient for economic growth. The land and its resources provide the underpinning upon which development occurs. The ownership and use of the land affect the options available for future developments. For rural people, their relationship to the land takes on a special meaning in their work, culture and community life. "Throughout history," writes one land economist, "patterns of land ownership have shaped patterns of human relations in nearly all societies."[1]

In the United States in recent years, the question "who owns the land?" has been raised from a number of directions. Gene Wunderlich, an economist for the U. S. Department of Agriculture, describes the trend: "Many groups in recent years have been concerned about the concentration and distribution of wealth in America. This concern often involves the land. Corporate farming, ownership of property by aliens, accessibility of new single family housing, the effects of real estate investment trusts, and the role of many large American corporations in natural resource and land development--all are phrases which recall the various forms this concern has taken over the last decade."[2]

The development of a concern with issues of land ownership represents, to some degree, a logical evolution in the nation's conceptions about the possession of land, and the rights and responsibilities which accompany it. Much of the early settlement and development of the nation's land carried with it a fierce ethos of the rights of the private property owner. Still today as one land use scholar writes, "those who control much of our privately held land place extremely high value on individual freedom in doing with and to the land what the owner chooses, often without regard to the effects on the ecological system, neighbors, or the general public."[3] In the twentieth century, though, these laissez faire attitudes regarding land ownership have been challenged by new attitudes which recognize that the use of the land by one owner may affect the livelihood and well-being of others. A complex body of land use regulations has evolved, seeking to balance the rights of ownership with responsibilities to the environment, the society, and to future generations who must use and live upon the soil.

As we move toward the twenty-first century, debates over use of the land, and distribution of its benefits, have again led to questions about its ownership. One advocate of land reform in America has argued the essential connection between land use and land ownership:

> It is ownership--and the economics that surround ownership--that determine whether land is farmed or paved, strip-mined or preserved, polluted or reclaimed. It is ownership that determines where people live and where they work. And, to a great degree, it is ownership that determines who is wealthy in America and who is poor, who exploits and who gets exploited by others.[4]

Wunderlich, the USDA land economist, puts the implications of land ownership even more broadly, "Land is a means for distributing and exercising power."[5]

In theory, the United States is well-endowed with enough land and resources to meet the needs of its people. Marion Clawson, a leading land use scholar, points out that "In 1970, the average person in the United States had the products and the use of about eleven acres of land.... This land is owned by individuals, by groups and by governments, and it is used by various persons or groups, but all of us benefit, in one way or another, from its existence and from its productivity."[6] While all may benefit, studies suggest that some are more likely to benefit--or to control the benefits--than are others. Most of the population lives on the two percent of the U. S. land which is classified as residential, and ownership of that land is widely distributed. But, according to best estimates, of all the private land in the United States, some 95 percent is owned by just three percent of the population.[7] Various governmental agencies own almost 42 percent of the land including vast public lands in Alaska. As few as 568 corporations, according to a U. S. Department of Agriculture study, own or control some 30.7 million acres of land, almost a quarter of all the U. S. land in private hands. Worldwide, these same corporations control almost 2 billion acres--an area larger than the size of Europe.[8]

In many countries of the world, both agrarian and industrial, such concentrated ownership has led to land reform policies aimed at redistributing the land, or at expanding control by the public sector over allocation of its benefits. Overseas, the U. S. government has openly supported such land reform policies. Domestically, however, land reform as such has not emerged as a major policy issue. This prompts one student of rural development to argue, "Ironically the U. S. has been preaching the virtues of land reform to less developed countries since the end of World War II. The forces that resist land reform in Latin America and Asia are similar to the forces that have prevented it from becoming a subject of serious discussion in this country. But for better or for worse, land reform is as much a key to the elimination of rural poverty in America as it is anywhere else on the globe."[9]

In contrast to the lack of public debate on land reform questions in the U. S., land use issues in the 1970's have aroused public and governmental concern. Increasingly, uses of the land for agriculture, energy or recreation compete and conflict with one another. Increasingly decisions about land uses involve more public scrutiny and regulation. These conflicts and debates have led to the question "who owns the land?". There is growing consensus on the need to know the answer. This chapter will review in brief the questions about land ownership, as they have been reflected in discussions of these competing land uses. Then we will return to what is known about who owns one part of rural America, the region called Appalachia.

Agricultural Lands

Perhaps the most volatile of land-related issues in recent years has been in the area of agriculture. According to one source, "in the last twenty years, the nation has lost 60 percent of its farms. Ten farmers a day leave the land, and it is estimated that 200,000 to 400,000 farms will disappear for the next twenty years if present trends continue."[10] Behind this picture is both an internal restructuring of farming (especially a trend toward fewer and larger farms), and a loss of farmland to non-farm uses. Both are associated with a changing pattern of ownership of U. S. farmland.

There are a number of complex reasons for the changing ownership, including urban sprawl, the economics of farming, and land speculation by non-farmers. The consequences of the changing ownership are far-reaching. They have to do with such questions as the most efficient size and location of farms for production of the nation's food supply; the social and political, as well as economic consequences of concentrated or monopoly control of food production; the environmental impacts of large-scale agriculture and farm and timber technologies; and the effects of ownership patterns on farm families and farm communities. Such questions cannot be fully explored without the answers to the antecedent question : "who does own America's farmland?"

The 1974 Census of Agriculture found that almost 40 percent of all private farmland in the U. S. is owned by non-farmers.[11] But there is yet no complete or satisfactory answer to the question of ownership of farmland. Only the trends are visible, partially but incompletely documented. Among them are the following:

1. Growth of Concentrated Farm Ownership, Especially Corporate Ownership. One trend which is clear is that farms are increasing in size, "a trend pushed along as much by little farms becoming larger as by big farms becoming bigger."[12] Part of this change reflects the entrance by corporations and agribusiness into all phases of food production. In California, for instance, a 1970 study by the University of California Extension Service found that 3.7 million acres of California farmland was owned by 45 corporate farms. Thus, one analyst concludes, "nearly half of the agricultural land in the state and probably three-quarters of the prime irrigated land, is owned by a tiny fraction of the population."[13] More recently, there have been widely publicized accounts of growing investments in farmland by pension funds, insurance companies, and other non-farm investors.[14] A 1981 two-million dollar study by the Department of Agriculture found that "government policies which are aimed at helping farmers actually have hastened the trend towards bigger and fewer farms, and jeopardized the future of family ownership."[15]

2. Concentration of Timberland Ownership. Some of the most concentrated ownership of land in America is found in the case of woodland. Nationally, estimates suggest that over one-half of the forestland is owned by the federal government. Of the remaining, much is held by timber and paper corporations, with the degree of corporate ownership varying from region to region. In New England, corporate ownership of timberland may be the most prevalent. Estimates in Maine, for instance, suggest that a dozen pulp and paper companies own 52% of the state.[16] In upstate New York, the New York Temporary Study Commission on the Future of the Adironadacks found in 1970 that more than 50 percent of the private land studied was owned by 1 percent of the landowners, with three timber companies owning over 100,000 acres each.[17] Over half of the 67 million acres owned by the paper and pulp industry is in the south, though this represents only 18 percent of the region's total timberland.[18] Many observers expect the control of timberlands by corporations to grow in the south, as companies like Georgia Pacific move their headquarters from the northwest back to the region.[19]

3. Minority Ownership: Black-Owned Land. The impact of farmland loss has been particularly dramatic for certain groups and regions of the country. Black landowners in the South have been particularly hard hit, especially given as land serves as one of the most basic resources for the rural black community. "The more than 12 million acres of land in the South owned in full or in part by blacks in 1950 had declined to less than 6 million by 1969. For the same period, the number of black full or part time farmers declined from 193,000 to less than 67,000."[20] While the number of large farms has increased nationally in recent years, the proportion of these owned by blacks remains miniscule. For instance, in 1969, 12 percent of all southern farms had sales of $20,000 or more, but only 2 percent of non-white farms fell into this category. There is little reason to believe that the trend has changed. While white landowners experienced considerable losses during this time, the losses were proportionately greater for black landowners.

4. Foreign Ownership. In the late 1970's, another public concern, prompting quick Congressional response, involved the question of purchase of farmland by foreign investors. The International Investment Act of 1977 authorized the President to "conduct a survey of the feasibility of establishing a system to monitor foreign direct investment in agriculture, rural and urban property...." A subsequent Survey by the Department of Agriculture found the extent of foreign ownership to be less than one might have expected: less than one-half of 1 percent of American farmland was in foreign hands on October 31, 1979.[21] While some 25 states developed some form of legislation limiting foreign investment in U. S. farmland, at least some observers question whether the matter of foreign ownership should be distinguished from the broader question of absentee ownership. A Deputy Assistant Secretary of the State Department testified before a Congressional Subcommittee, "Foreign investment in farmland need not be regarded as a separate issue, distinct from the more general issue of absentee ownership in land and its effect on the viability of the U. S. farm."

Yet the survey of foreign ownership has not been matched by a similar investigation of absentee ownership with other holding patterns of U. S. farmland. However one feels about the direction of the trends outlined here, a fuller documentation of farmland ownership is needed before the public policy questions can be adequately explored.

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Purposes of the Study

Issues related to the ownership and use of the land have long been matters of concern to people within the Appalachian region, as they have been to other groups across the nation. Yet, at the time this study was begun, there had never been a comprehensive study of the ownership of land and resources in the Appalachian region, nor of the related impacts of ownership patterns on issues of economic and community development. For this reason, the Appalachian Land Ownership Task Force proposed to the Appalachian Regional Commission in the fall of 1978 to conduct a study with these purposes:

1. To document ownership patterns of land in rural Appalachia, looking at such factors as extent of corporate ownership, extent of absentee ownership, extent of individual or family ownership, extent of local ownership, descriptions of principal owners, rate of change in ownership patterns, relationships between ownership and land use.

2. To investigate the impacts of these land ownership patterns upon economic and social development in rural Appalachia, exploring the relationship of land ownership patterns to land use, taxation structures, land availability for housing and industry, coal productivity, agricultural productivity, economic growth and stability, social development and stability.

3. To develop action-oriented policy recommendations for ARC, state, federal and local officials, government agencies and the public to assist them in dealing with problems relating to ownership patterns.

After two years of work, the Task Force is pleased to submit to the Appalachian Regional Commission and to the public this report, which we feel has accomplished these purposes.

Summary of Methods

The study of land ownership patterns is a difficult undertaking. Across the country there is a growing consensus on the need to know "who owns the land?." However, there are only a few previous studies which suggest how to find that out, or how to evaluate the effect of ownership patterns on other aspects of rural development. Building upon the methods of these past studies within the region and elsewhere, this study drew principally upon three types of data:

1. Survey of land ownership records in 80 counties: County tax rolls were used to determine the primary land and mineral owners in rural unincorporated areas of eighty counties in six states. The eighty counties were chosen to represent a variety of land ownership and land use patterns in the region. All absentee, corporate and government owners with holdings above 20 acres, and all local individual owners with holdings above 250 acres were recorded. Utilizing a standard coding sheet, researchers documented: type of ownership, residence of owner, land use, mineral and surface acres held, type of mineral, land, building, and mineral values, taxes paid, and the name and address of owner.

2. Case studies in 19 counties: Nineteen illustrative counties were chosen to describe land ownership and land use patterns more thoroughly and to explore their impacts upon aspects of economic development and community development. Case studies were based upon interviews with cross-sections of county residents, and use of other available information such as planning documents, census data, corporate reports, and newspapers. While regional conclusions cannot be drawn from the case studies, the case studies serve to illustrate relationships for further exploration.

3. Aggregate socio-economic data: To test the relationships suggested from the case studies, other local and regional data was gathered, including over 100 socio-economic indicators for the eighty counties. This allowed correlations to be made between the land ownership patterns and other characteristics associated with those patterns for the eighty county sample.

The data collected in this fashion produced a vast body of material. From the survey of landowners on the tax rolls, data was collected on over 55,000 parcels of land and minerals, representing some 20,000,000 acres. Hundreds of people were interviewed. Field notes and drafts of case studies amounted to some 1,500 pages. Some 100 socio-economic variables were collected on the 80 counties studies. The data was processed, synthesized, and analyzed on four levels: 1) for each of the 80 counties, 2) for the portions of each state studied, 3) for the regional sample, and 4) for types of counties, i.e. coal counties, agricultural counties, and recreation and tourism counties. (A complete description of the methodology is found attached to the regional report.)

Structure of the Report

The overall findings of this undertaking are reported in this Regional Report, which is based upon a synthesis of the survey data, case studies and aggregate analysis. Chapter I of this report reviews past studies of land ownership and related issues, both nationally and within the region. Chapter II profiles patterns of land and mineral ownership which were discovered in the study. Chapter III profiles the findings regarding property taxation of land and minerals in the states and counties studied. Chapters IV-VII then examine the relationship of land ownership patterns to issues of economic development, agriculture, housing, energy development and the environment. Chapter VIII summarizes the findings of the Regional Report and suggests recommendations for action. Finally, an Appendix to this report describes in detail the methodology used in every phase of the two-year study. A second Appendix provides an annotated bibliography of other works on land ownership and related issues, with an emphasis on the Appalachian region.

This Regional Report is based upon and supported by four further work products which have also been submitted to the Appalachian Regional Commission, together amounting to over 1,500 pages of material and a computer tape containing raw data. These products, which are available from the Commission or from the Land Ownership Task Force upon request, include the following:

1. State Reports: Summary of ownership patterns, taxation patterns, and key land related issues in the portions of each state studied, Alabama, Kentucky, North Carolina, Tennessee, Virginia, and West Virginia.

2. Case Studies: Nineteen in-depth case studies reporting ownership patterns more thoroughly with perceptions and analyses of the consequences of those patterns at the local level.

3. County Statistical Profiles: Six page summaries of land ownership and taxation patterns for each of the eighty counties surveyed.

4. Computerized Data Bank: A computer tape containing a) thirteen variables for each of the 55,000 parcels of land and minerals studied; b) approximately 120 socio-economic variables for each of 80 counties studied; c) additional data sets created in the analysis, accompanied by a user's guide to the information.

Together, the Regional Report and the other work products provide an integrated approach to the study of land ownership which can be useful at local, state, and regional levels.

Contributions and Limitations

This study has been a unique one in at least two respects: first, it is one of the few studies which attempts to explore land ownership patterns and related impacts comprehensively and systematically within a given region of the United States. Secondly, it was initiated and conducted by a team of citizens and scholars of the Appalachian Region, who combined their first-hand knowledge and experience of the region with in-depth, often tedious, research to produce the report. From these unique features have been derived important contributions, as well as limitations, of the study.

In the first respect, the study has made a significant step in documenting land ownership patterns in one region of the country, as well as demonstrating that such information can be attained and analyzed through local research. Hopefully, this will stimulate further study in other places of "who owns the land?", as well as illustrate one approach for finding out. In addition, the study has attempted to analyze the impact of the ownership patterns on other aspects of economic and community development, an undertaking which has previously received even less systematic attention than documentation of the ownership patterns themselves. This emphasis on the impacts of land ownership at times has limited the degree to which other factors of development, e.g. labor, capital, terrain, could also be analyzed. While the study finds that considerations of land ownership should be necessary components of local and regional policies, that finding does not imply that changes in land ownership by themselves would be sufficient for solving the problems herein discussed.

Secondly, this project has been unique in that it has been one of the few research projects supported by the Appalachian Regional Commission which was initiated and conducted by an independent task force of citizens and scholars within the region. The Task Force applauds ARC's willingness to support such a regional, "citizen-based" research model. The involvement of persons with first hand experience, knowledge and demonstrated concern for the issues addressed has been a crucial component of the research process. Such involvement, however, carries with it a perspective upon the importance and urgency of the problems, which is likely different from the perspective which would be embodied in the study by another group, e.g. by a Washington-based, research consulting firm. To recognize this is not to say one approach is a more or less valid form of inquiry than the other, it is simply to acknowledge that each approach carries with it differences in design. In those differences, no doubt, will lie strengths of this study to some, and limitations to others.

In sum, the Task Force sees this study as a beginning attempt, not as a final word, to address land ownership patterns and related problems in the Appalachian region. From our perspective, the study hopefully will foster further study, stimulate greater public debate, and perhaps even encourage changes in patterns and problems long under-recognized in the policies that affect the region.

Land Reform. Actions must be taken which deal with the underlying problems of concentrated and absentee ownership. Mechanisms must be found by which people of the region can gain more access to, control over, and benefit from the land and its resources;

Mitigation of Impacts. Actions must be taken which mitigate the adverse effects of ownership patterns, even though they do not address directly the underlying structures of ownership. Policies should insure patterns of land use beneficial to the entire community, provide adequate property tax revenue for the delivery of services; promote diverse economic development; provide adequate land for housing; and insure energy development that is not destructive of local communities.

Land Retention. Policies must be developed to prevent the rapidly occurring loss of local land for local use, including economic and housing development, as well as agricultural use.

This regional report is backed by 1500 pages of state overviews, in-depth county case studies, and county land ownership profiles for each of the 80 counties surveyed, which are available upon request. The study was funded, in part, by the Appalachian Regional Commission and benefitted greatly from the participation of dozens of people in the region.

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PREFACE

Background

This study is an attempt to document land ownership patterns in the Appalachian Region and to analyze their impact on rural communities. Representing the most comprehensive such study to date, the project was initiated by residents of the region in fall 1978, to examine whether and how land ownership patterns--especially corporate and absentee ownership--underlie or contribute to many of the policy issues that the region faces: property taxes for local services, continued economic underdevelopment, loss of farmland, inadequate housing, energy production, environmental damage.

Conducted by the Appalachian Land Ownership Task Force, a coalition of community groups, scholars and individuals, associated with the Appalachian Alliance, the study has involved the work of some sixty people in six states. Most of the field work was conducted in 1979, with most of the data analysis, writing and production of the report completed in 1980. The study consists of seven parts--a regional overview (Volume I), and one volume for each of the six states studied: Alabama (Volume II), Kentucky (Volume III), North Carolina (Volume IV), Tennessee (Volume V), Virginia (Volume VI), and West Virginia (Volume VII). Each state volume consists of a state summary, in-depth case studies of several counties on the impacts of ownership patterns, and statistical profiles of land patterns for each county studied.

Major funding for this study came from the Appalachian Regional Commission, to which the Task Force is grateful. Further funding was received from private foundations to complete the project. Extensive in-kind contributions came from colleges, non-profit community groups, and individuals in the region who generously donated time, office space, travel, computer processing and typing assistance to help make the project possible. The project was administered by the Center for Appalachian Studies, Appalachia State University, with research coordinated from the Highlander Research and Education Center, New Market, Tennessee, and by teams of citizens and scholars in each state. The project benefitted greatly from the widespread participation of groups and individuals within the Appalachian region.

2. Appalachia's land and mineral resources are absentee-owned. Nearly three-fourths of the surface acres surveyed are absentee-owned, i.e. held by out-of-county and out-of-state owners. Four-fifths of the mineral acres in the survey are absentee owned. In one quarter of the survey counties, absentee-owned land in the sample represented over one-half of the total land surface in the county. Contrary to expectations that absentee ownership would predominate only in the coal counties of central Appalachia, the study found a high level of absentee ownership throughout the 80 county survey area.

3. Large corporations dominate the ownership picture in much of Appalachia. Forty percent of the land in the sample and 70 percent of the mineral rights are owned by corporations. Forty-six of the top fifty private owners are corporations. Of these, 19 are principally coal and coal land corporations, owning 1.5 million combined surface and mineral acres, 11 are oil, gas and diversified energy companies owning 1.2 million acres, 9 are timber companies owning 1.0 million acres, 8 are steel corporations and metal corporations owning .8 million acres, and 4 are railroads owning .6 million acres.

4. Little land is owned by or accessible to local people. Under one-half of the land in our sample is owned by individuals, and under one-half of that is owned by local individuals. Corporate ownership, often for energy and resource exploitation, and government ownership, with associated tourism and recreation development, threaten the access people in the region have to the land and the control they exercise over its use.

These ownership patterns are a crucial underlying element in explaining patterns of inadequate local tax revenues and services, lack of economic development, loss of agricultural lands, lack of sufficient housing, the development of energy, and land use.

TAXATION OF LAND AND MINERALS. Despite the land and mineral wealth of Appalachia, the region's local governments remain poor. Part of the reason for the lack of county revenue, the study finds, lies in the failure of the property tax system to tax the region's wealth adequately and equitably. The problems may be seen in reference to privately owned mineral and surface lands, as well as government owned, tax-exempt properties.

Mineral Taxation. Though values of mineral properties have escalated rapidly in Appalachia, local governments have not experienced a corresponding increase of property tax revenues. Generally, in fact, mineral rights are greatly under-assessed for property tax purposes:

> --Over 75% of the mineral owners in this survey pay under 25¢ per acre in property taxes. Some 86% pay less than $1.00 per acre.
>
> --Using conservative calculations, in the major coal counties surveyed the average tax per ton of known coal reserves is only $.0002--or 1/50 of a cent.

The problem is particularly acute in eastern Kentucky: in the twelve counties surveyed (which include some of the major coal producing counties in the region), the average property tax per acre of minerals is 1/5¢ ($.002). The total property tax received from mineral properties for these 12 coal-rich counties was a meager $1500 in 1979. In Alabama, the average tax per recorded acre of mineral rights was 4¢, and minerals which are part of fee simple land are not considered for property taxation at all. In Tennessee, a directive of the State Board of Equalization 9 years ago to apply a fair market value to mineral rights still has not been carried out. While West Virginia has made important strides in taxing mineral properties, problems still persist there, as well.

Taxation of Surface Rights. In general, taxes paid on rural lands are also low when compared to their rising market value. Overall, the amount of taxes paid per acre of surface in the survey is only 90¢. Almost a quarter of the owners in the study pay less than 25¢ per acre. In general, the large and the absentee owners tend to pay less per acre than the small, local owners pay.

Part of the reason for this state of affairs, the study finds, is that the absentee owners are holding their property for its speculative value, or for the value of the minerals underneath, and do not make improvements which would increase the value of the land. On the other hand, the local owners tend to build upon their land, and to make more valuable improvements. In addition, in Tennessee, Kentucky and Alabama, vast tracts of land have received tax breaks designed for agricultural lands when, in fact, they are held for speculative purposes or mineral development, not for farming at all.

Tax-Exempt Lands. Many counties in the survey contain substantial federal or other government holdings, which are exempt from local taxes. In the case of state-owned lands, no programs were found in the counties studied that compensate counties for the loss of this land from the tax base. In the case of federal lands, "in-lieu of tax" payments are set at a minimum of 75¢ per acre, but this amount, the study finds, rarely is equal to the average tax paid by private owners. In Swain County, North Carolina, for instance, where over 80% of the land in the county is federally owned, if federal agencies paid the same amount per acre as out-of-state private owners paid, the county would receive over $150,000 annually in new revenues.

Taken together, the failure to tax minerals adequately, the underassessment of surface lands, and the revenue loss from concentrated federal holdings has a marked impact on local governments in Appalachia. The effect, essentially, is to produce a situation in which a) the small owners carry a disproportionate share of the tax burden; b) counties depend upon federal and state funds to provide revenues, while the large, corporate and absentee owners of the region's resources go relatively tax-free; and c) citizens face a poverty of needed services despite the presence in their counties of taxable property wealth, especially in the form of coal and other natural resources.

At a time of federal budgetary cut-backs, policies of seeking local revenues from new or existing sources would seem prudent. By conservative calculations, for instance, improved taxation of coal reserves in the major coal counties in the sample would more than quadruple the mineral taxes currently received. The new tax revenues would equal $16.5 million annually, or almost $300,000 per county. Eight million dollars of the new revenue would be generated in eastern Kentucky, where they are desperately needed.

ECONOMIC DEVELOPMENT. The study finds that land ownership patterns vary according to types of counties: corporate ownership is greatest in the counties with the greatest coal reserves; government ownership is associated with tourism and recreation counties; and individual ownership is highest in the major agricultural counties. In each type of county, land patterns affect the course of economic development which occurs.

Coal Counties. In the major coal counties in the sample, 50 percent of the land surveyed is corporately held (compared to 31 percent in agricultural counties and 23 percent in tourism counties). Some 72 percent of the land and 89 percent of the mineral rights are absentee owned, and the ownership is highly concentrated in a few hands. With absentee ownership, the wealth derived from the land and mineral resources is drained from the region; with concentrated ownership, a few, primarily corporate owners, can dominate the course of a county's development.

The study finds, for instance, that these concentrated absentee and corporate land ownership patterns serve as one limiting factor to economic diversification, contributing to a lack of access to developable land, lack of locally controlled capital, and lack of adequate local infrastructure (related, in part, to the undertaxation of the land and mineral resources.) Without diversification, the areas become more vulnerable to the "booms and busts" of the coal industry, and, in turn, the concentrated land ownership patterns also contribute to the problems associated with each cycle.

With "booms" come greater pressures upon limited land for housing, and greater demands upon already strained county budgets for more services. When "busts" occur, few non-coal jobs are available, use of the land for survival is limited for most of the population (even for tilling the hillsides), and, for many, outmigration becomes the only real choice. In fact, in the coal counties surveyed, there is a strong association between the degree of corporate ownership of a county and the level of outmigration between 1960-70 (a period of coal decline), such that the greater the corporate ownership, the greater the percent of the population who left the area.

Tourism and Recreation Counties. While coal counties are characterized by patterns of corporate land ownership, recreation and tourism counties are associated both with large federal holdings (e.g. Forest Service, National Parks) and smaller, individual holdings, usually absentee owners holding the land for speculative purposes or for second-home developments. While, on the whole, the evidence for these counties does not indicate that land ownership itself limits economic diversification, the tourism and recreation industry which springs from the use of the land promotes a pattern of low wage and seasonal employment. At the same time, local residents face rising prices for land, housing and other goods due to the spending and speculation of the usually more affluent "outsiders."

Agriculture. Traditionally, in Appalachia, the small farm has been important, both economically and culturally. Using Agricultural Census records, the study has found a dramatic decline of farming in the region: In the 80 counties surveyed, well over a million acres of farmland went out of agricultural production between 1969-74, the latest year for which figures are available. Over 17,000 farmers left farming in this period, about 26 percent of the farming population in these

Energy Lands

While use of the land for agriculture (including cropland, grazing land and timber land) represents the largest use of rural land in America, increasingly important in this era of "energy crisis" is use of the land for extraction and production of energy, especially through mining coal and other energy sources. However, if little is know about ownership of agricultural lands, still less is known about energy lands in America, either their use or ownership. Marion Clawson, in his book America's Land and Its Uses, wrote, for instance, "mining is an extremely important, though highly localized, use of the land about which we have very little information. Almost no source of data about land use provides information on mining as a land use."[22] In its multi-million dollar study, the 1980 President's Coal Commission acknowledged the "land shortages" created in Appalachia, "in part attributable to coal companies, railroads, and other corporations owning much of the coal rich acreage." However, the Commission stopped short of complete analysis, observing that "statistics for land ownership are often buried in inaccessible or untraceable county records.[23]

Slightly more knowledge exists of who owns the U. S. energy reserves under the land, though that is speculative. The last decade has witnessed growing national concern over the concentrated ownership of these energy resources, particularly by energy conglomerates. As early as 1967, a Federal Trade Commission study disclosed that five major oil companies had acquired coal rights to 2.5 million acres of public and private land. "As of 1970, 29 of the top 50 coal companies had become oil company subsidiaries, and oil companies were busily acquiring hundreds of thousands of acres of additional coal lands...."[24] By 1980, oil and gas companies owned 41.1 percent of all privately owned coal reserves in the country, according to the President's Coal Commission. Six of the top ten national coal reserve owners were primarily owned by larger oil and gas companies.[25]

In addition to these oil and gas interests, the Federal government is a major owner of the nation's coal resources. In the West, where roughly half of the nation's coal reserves are located, the federal government is estimated to own 65percent of the coal and to control, indirectly, another 20 percent.[26] Over the years, leasing policies allowing the development of these reserves by private interests have become matters of public controversy. The government has developed a "multiple use" philosophy, which attempts to balance environmental, energy and socio-economic considerations in the development of its lands. Currently, environmental interests are attempting to stall any further leasing, while development interests, spurred on by the "Sagebrush Rebellion," are demanding more private access to federal reserves. Regardless of the outcome of this debate, it is clear that whether and how these reserves are developed will have major effects on U. S. energy policy.

In shaping this policy, at least some public information exists on the locatio of the federally owned coal lands. However, in the East, and in parts of the West where federal ownership of energy reserves is not as extensive, little systematic data is available on the location of energy resources held in the private sector, nor on the ownership of the lands above them. (In the Appalachian coalfields, in particular, there is extensive separation of mineral ownership from surface ownership.) As will be seen in the next section, a few studies of coal land ownership have been done in the Appalachian area, but these are scattered and incomplete. In other parts of the country, even less information could be found.

One study has been done outside of the Appalachian coalfields in southern Illinois.[27] The study looked at 380,000 acres of corporately-owned coal land in 35 Illinois counties. Of this land, 83 percent was owned by only six corporations. Over 99 percent of the total was owned by large absentee corporations. Small, independent company landholdings were found in only six counties and accounted for only 0.7 percent of the acreage studied. In general, the ownership of land reflect the national picture of growing takeover of energy reserves by integrated energy corporations.

Despite the lack of systematic information, the question of ownership of energy lands and reserves would seem to be an important one for shaping national energy policies. Concentrated ownership of reserves poses possibilities of monopoly control of energy supply, similar to those raised by concentrated control of energy production. Ownership and leasing patterns of private lands, as of federal lands, affect what can be mined, where, when and by whom. At the local level, literature indicates that coal land ownership is associated with other policy questions--

how to tax coal reserves; conflict between use of land for energy or other needs, such as agriculture; the impact of ownership patterns on local economic development. It was perhaps with these issues in mind that Congress, in the National Energy Act of 1978, called for a study of the coal industry, including its land ownership: "The study shall evaluate the economic and social impacts upon coal producing counties and states of present and perspective land ownership patterns...."[28] So far, the study has not been done.

Tourism and Recreation Lands

One of the fastest growing demands for use of land in America is for purposes of recreation and tourism. Clawson observes that "compared with the land used by the 'big three' of grazing, forestry, and cropland, the total acreage of land in recreation use is small--about 40 million acres in the 48 contiguous states and less than 50 million in all 50 states. But the number of people rather directly concerned is large--perhaps more than half the population, the exact number is not known...."[29] In response to this demand, two broad changes in ownership patterns are occurring, each with considerable controversy. On the one hand, more private land is transformed into public land to become more widely available for public use; and, on the other hand, more private land is bought for purposes of private recreation developments.

The first transformation is seen as more and more lands are taken for National Recreation Areas, National Parks and National Forests. The purchase of private land for public purposes, often carrying with it the threat of imminent domain by the government, has provoked considerable outcry from affected landowners. The growing restrictions on the use of public land, usually to protect its environmental and recreational qualities (e.g. RARE II), have angered private interests who seek to use the land for other purposes (e.g. mining or timbering.) These land ownership and land use changes have major consequences for the economies and cultures of the communities affected, including impacts on the use of land for agriculture or private development, development of tourism economies, and loss of land from the local tax base.

The second, often overlooked, effect of increased land use for recreational purposes is on the land ownership patterns of private lands themselves. A 1976 study by the American Society of Planning Officials, Subdividing Rural America: Impacts of Recreational Land and Second Home Developments, found that at least ten million recreational lots have been subdivided in the U. S., to be used as speculative investments, seasonal occupancy, or permanent occupancy.[31] The phenomenon of "recreational land" ownership is widespread. "One U. S. family in 12 owns a piece of recreational property--either a vacant recreational lot or a second home."[31] Such transformation of ownership, in turn, can have an impact on the future use of the land. The lots "can preclude alternative land uses and dictate patterns of growth for years to come."[32] Moreover, such recreational land developments, while serving primarily the urban dweller, can have major consequences for the (usually rural) communities where they occur. These impacts are environmental (disruption of the land), economic (increased demands for local services, loss of land for agricultural or other purposes), and social (disruption of lifestyles and communities).[33] As in the cases of agricultural or energy lands, the full extent of these impacts is difficult to assess, without adequate knowledge of the land ownership patterns which underlie them.

The Need to Know

Land ownership, then, is an important component of the debates on land use. Who owns the land affects how the land is used, and vice-versa. Changes in ownership and use patterns can have dramatic consequences on the course of community growth. Yet, despite the importance of land ownership, what is perhaps most abundantly evident is how little is known about who actually owns rural America. In his comprehensive article on American land, Peter Meyer summed up:

> "Almost everything about American land is known except who owns it. Somehow our vast mineral resources are assessed and quantified, mountains are measured,and ground cover and soil are analyzed.... The concept of land ownership is quite another story. It isn't part of American topography, and no atlas charts or maps the contours of proprietorship that play such an integral role in the shaping of the landscape.[34]

Without such information, full assessment of the impacts and consequences of ownership is, almost by definition, an impossible task.

Ironically, it may have taken the public outcry over foreign ownership to provoke broader awareness of the need to know about domestic ownership as well. The attempts to find out the extent of foreign investment indicated to a number of officials how difficult such information is to obtain. A publication of the Farm Foundation and the U. S. Department of Agriculture makes the point:

> That inquiry (into foreign investment) highlighted what was well-known by persons familiar with U.S. real estate: The systems for recording, taxing and transferring land are not suitable for assembling information on the ownership of land. The technical, legal and economic features of the highly localized, individualized and land records systems in the U.S. resist the aggregation of land data. There was no simple, direct way of determining who owned America's land. Yet there was, an continues to be, a desire to know how wealth in land is distributed.[35]

This study represents one attempt to document who owns the land wealth in one important region of the country. From the examination of who owns the land in rural Appalachia can be derived further understanding of the effects of land ownership on the rural development of the region. Hopefully, also, from the inquiry will come further awareness of the importance of knowing about land ownership in America--and about how to find that out.

LAND OWNERSHIP IN APPALACHIA

The land ownership questions of the nation are mirrored in the Appalachian Region, one of the most densely populated rural areas of the country. So also is the lack of systematic study of land ownership and land use, prompting one scholar of the region to write in 1970, "although many writers in Appalachia speak of the outside control of wealth, the degree and extent to which this is true has been only slightly and sporadically documented. There are no systematic, thorough studies of the land and mineral ownership of the region."[36]

During the 1970's, little of a general nature changed to alter the accuracy of this observation. However, several small, scattered studies emerged which did document the importance of the land ownership question, and which provide models of methods for further study. (A summary of the methods used in these earlier studies may be found in the methodological appendix.) As in the discussion of land issues on the national level, the review of relevant literature in Appalachia involves looking at agricultural lands, coal and mineral lands, and recreation lands.

Agricultural Lands

Appalachia is often thought of as the land of the small farmer. In fact, studies by the Department of Agriculture in 1930 discovered that the southern regions of Appalachia had the heaviest concentration of small farms in the country.[37] Yet, despite national interest in the loss of farmland and the decline of the small farm, little systematic attention has been given to the contemporary plight of the farmer in Appalachia.

In many areas, though, farmlands are being lost, subject to the same pressure that affect farmlands nationally, as well as some particular pressures of the region. For instance, the development of coal lands, particularly where strip mining is involved, many limit the use of land for subsequent agricultural development. Pressures to sell land and/or mineral rights also may result in the loss of agricultural land. Building of pump storage facilities or dams to produce electricity take prime agricultural bottomland, often in areas where such land is at a premium. Historically, for instance, TVA dams have flooded thousands of acres of farmland in east Tennessee. Recreational development and associated federal acquisitions have placed undue pressures on farmland in western North Carolina, and southwestern Virginia. The conflict between agricultural and other land uses is enhanced by the fact that small farm agriculture in Appalachia is viewed by many as economically non-viable.

Despite the general knowledge of these pressures, few specific studies have been done on the changing ownership of farmland in Appalachia, or on its related impacts on the development of the region. An exception is the study on southern Ohio, by Dr. Nancy Bain and associates. They discovered a "shift away from agricultural land use...agricultural land use declined by 56.2 percent from 1900 to 1970."[38] Accompanying the trend was the loss of resident farm owners and movement towards absentee ownership, much of it held for personal or recreational purposes.

In turn, the patterns of absentee ownership have had a marked impact on the development of the area. Few of the non-resident owners have made any "improvement of the land or structures since purchasing them. The majority of parcels--60 percent--had no or an uninhabitable structure."[39] As a result of the lack of development, the absentee owned land contributed little to the local tax base. As one of Bain's associates summarized, "The relative disuse of absentee land may...impede the region's agricultural development as well as property taxes."[40]

The quality of development in a rural agricultural community may be affected by the size of ownership, as well as by absentee ownership (as was found in the California study by Walter Goldschmidt).[41] In Alabama students at the University of Alabama compared the ten counties in the state with the smallest average-size farms, with the ten counties with the largest average-size farms, in terms of agricultural productivity, land use tenure patterns, and indicators of community development. Almost every indicator of economic and social well-being was more favorable in the small farm counties. For example, the small farm counties had twice as much revenue from ad valorem taxes and over 2½ times as much total tax revenues. Additionally, they had twice as many miles of county roads, and spent one-third more on education. The median income was almost twice as high, the poverty rate and proportion of substandard housing was half that of the large farm counties. The small farm counties were located predominantly in the Appalachian section of northern Alabama.[42]

In agricultural areas, then, two studies suggest that patterns of absentee and large-scale ownership do affect rural development. However, little systematic information is available on the extent of these patterns in agricultural areas of Appalachia. The patterns are more completely documented in the case of coal and mineral lands.

Coal and Mineral Land Ownership in Central Appalachia

Perhaps in no section of Appalachia has land ownership and its related impacts been a greater issue than in what is known as central Appaalchia (eastern Kentucky, southern West Virginia, southwestern Virginia, portions of eastern Tennessee). It is in these areas where coal production is predominant. And it is also in these areas where a pattern of absentee corporate land ownership has been verified in numerous studies, historically and today.

In much of this region, purchase of land and mineral rights by absentee, corporate interests began in earnest in the last half of the last century. Harry Caudill, one of the best known writers of the region, describes the process in this way, "After the Civil War industrialists were able to glimpse the outlines of the nation's coming growth and they foresaw the indispensability of Appalachian coal. Agents of coal and iron companies and ambitious speculators moved in to corner title to the mineral deposits the geologists had located."[43] Throughout much of the region, a rapid change in land ownership patterns occurred, often transforming small agricultural and homestead holdings to large absentee and corporate hands. The change was greatest in the Central Appalachian coalfields, though it extended to Southern Appalachian timber stands and to other resources as well. Historian Ron Eller describes:

> By 1910 outlanders controlled not only the best stands of hardwood timber and the thickest seams of coal but a large percentage of the surface land in the region as well. For example, in that portion of western North Carolina which later became the Great Smoky Mountains National Park, over 75 percent of the land

> came under the control of thirteen coroprations, and one timber company alone owned a third of the total acreage. The situation was even worse in the coalfields. According to the West Virginia State Board of Agriculture in 1900, outside capitalists owned 90 percent of the coal in Mingo County, 90 percent of the coal in Wayne County, and 60 percent of that in Boone and McDowell counties.[44]

Since the turn of the century, the land question has arisen again and again in studies of the region. For instance, the report of the 1926 President's Coal Commission referred to the concentration of corporate ownership, observing that the U. S. Steel Corporation and its subsidiaries owned 750,000 acres of coal lands in Appalachia; Consolidation Coal owned 340,000 acres; and Pittsburgh Coal and Coke, 164,000 acres (though, the Commission concluded, there were "relatively few instances where companies owned far in excess of what is needed to protect their investments.")[45] In the 1930's, Watkins, a British analyst took a stronger position: for the development of independent communities in Appalachia, he said, "a necessary step...would seem to be much larger and stricter control over the ownership of land, for in many cases the operating companies own all of the land within convenient reach of the mines."[46]

With the advent of the War on Poverty in the region in the 1960's, the issue of ownership of the region's land and mineral wealth again began to be raised. In every state in central Appalachia, studies of land ownership, varying in quality and scope, questioned why such poverty existed amidst such land and resource richness.[47]

Kentucky: One of the earliest such studies was done in 1969 by Richard Kirby for the Appalachian Volunteers. Kirby began his study with the observation, "Poverty in the United States has always seemed especially cruel and ironic so close to so much bounty. In eastern Kentucky, the paradox has yet another layer of irony: some of America's poorest people live literally on top of some of America's richest land."[48] Kirby then asked "Who owns east Kentucky?" and searched for an answer in county tax records of eleven east Kentucky courthouses. In answer he found that some thirty one people and corporations owned about four-fifths of east Kentucky 's coal. About 86 percent of the coal land was owned by absentee interests. While concentrated, absentee interests controlled the wealth, they returned little in the way of property taxes to needy county coffers. About the same time, a journalist for the St. Louis Post Dispatch found the same pattern of undertaxation. In explanation, a Kentucky tax commissioner was quoted as saying, "the coal companies pretty much set their own assessments.... We have no system for finding out what they own."[49]

West Virginia. During the same period, the theme of poverty-amidst-wealth was again echoed in West Virginia. Writing in the New Republic, Paul Kaufman observed that "West Virginia is notorious not for the money it gets but for the money that corporations take out of it." Looking at the nine southernmost counties, Kaufman found that "nine corporations own more than one-third of the land in these counties, and the top 25 landowners control more than half. Of the nine dominant corporations, only one is a West Virginia company doing business principally within the state."[50] About the same time a public interest research team headed by Davitt McAteer at the West Virginia University Law School surveyed the top fourteen coal producing counties in the state, and found a similar pattern: twenty five landowners owned approximately 44 percent of the counties studied--yet payed only about one-tenth of the real estate taxes.[51]

Some five years after the McAteer study, Tom Miller, an investigative journalist for the Huntington Herald Dispatch conducted a further statewide search in an attempt to answer the question, "Who owns West Virginia?". "Certainly not West Virginians," he found," more than two thirds of the non-public land in the state is controlled by outside interests. These are giant fuel, transportation and lumber companies."[52] Combining mineral and surface rights, he found the problem to be pervasive. "In almost 50 percent of West Virginia counties, at least half of the land is owned by the out-of-state corporate interests."[53] Direct ownership of land, he found, was extended through control of land and minerals by leasing: citing a 1971 report by the West Virginia Public Service Commission, Miller said that thirteen companies leased 3.8 million acres in West Virginia, and that the amount was climbing by one-half million acres a year. The combination of ownership and leasing meant that absentee landlords, "own or control two-thirds of the land in this mineral-rich state." At the same time, "they reap the benefit of low tax assessments, often paying as little as two cents per acre in annual property taxes for valuable coal, timber or oil and gas holdings."[54]

Tennessee: The patterns of concentrated corporate and absentee ownership of coal lands, accompanied by low tax assessments, have also been found in the Tennessee coalfields. In 1971, a study by three Vanderbilt University students of the five major coal producing counties in northeastern Tennessee found that nine large corporations controlled 34 percent of the land surface, and approximately 80 percent of the coal wealth. Yet, in 1970, they accounted for less than 4 percent of the property tax revenue of these counties. Most of the concentrated ownership was found in the portion of these counties with the major coal reserves, while the remaining parts of the counties retained more dispersed, individual ownership.[55]

Virginia. The picture in the southwestern Virginia coalfields does not change. A 1973 study there found that fifteen corporations owned 602,283 coalfield acres, accounting for from 10 percent to 69 percent of the surface of the counties studied.[56] One company alone, Pittston Coal, owned 41 percent of this acreage. A further study by Dr. Carol Schommer in 1978 documented the inadequate assessment of coal lands in southwestern Virginia. Noting the increase in the fair market value of coal over the previous ten years, she found that the assessed value of coal had not risen. As in the case of in the other coalfield states, concentrated absentee ownership carried with it underassessment of mineral reserves.[57]

What do these studies tell us, in sum, of ownership patterns in the central Appalachian coal counties? First, it must be recognized that the evidence they present is still incomplete. The studies were done by different methods at different times, and for selected counties. They do not extend to many coalfield sections of the region, such as Alabama. Though the evidence is still fragmentary, the picture it paints is a consistent one. It is a picture of concentrated corporate ownership, with a great extent of absentee ownership. In his study Poverty Amidst Riches: Why People are Poor in Appalachia, John Wells summarizes what the studies say: "Corporate entities own at least 4,340,142 coal-rich acres of central Appalachia. Of this total, the top five corporations have 1,594,446 acres or 37 percent; the top ten control 2,442,635 acres or 56 percent; the fifteen largest own 2,977,798 or 68 percent; the twenty majors control 3,274,770 acres, in excess of 75 percent."[58] As for the rate of absentee ownership, more than 77 percent, some 3,357,491 acres, is held by firms located out-of-state. This ranges from a low of 37 percent in Tennessee to a high of 85 percent in West Virginia. In short, Wells concluded, "We have found that a small minority of mighty corporations control the wealth, and that most of these are absentee...."[59]

Recreation and Tourism Lands

If the coalfields of central Appalachia are associated with absentee corporate ownership, other parts of the region are affected by absenteeism of a different sort: that connected with second homes and development of the recreation and tourism trade. Some two decades ago as part of a "definitive" study of southern Appalachia,

SUMMARY

In sum, a review of previous studies around the nation and within the Appalachian region suggests the importance of land ownership as one ingredient of rural development. Again and again, the question of "Who owns the land?" emerges, be it in reference to use of the land for agriculture, for energy, or for recreation purposes. The debates on the national level over land ownership and land use are mirrored in rural Appalachia, where a number of studies have examined ownership of the region's farms, energy resources, and recreation areas. In general, in reviewing these studies, we find:

1. Though there have been a number of studies on ownership of rural Appalachia, these have been localized, uneven in quality and varying in approach. Remarkably little systematic, comprehensive attention has been paid to ownership questions. However, the smaller studies have suggested the importance of the land ownership question in the region, and have demonstrated methods for its study.

2. While the study of land ownership has been important but limited, there has been even less systematic investigation into the consequences of the ownership patterns. Many studies within the region have suggested characteristics that go along with land ownership patterns--e.g. undertaxation of mineral lands, loss of farms, drain of economic wealth, etc. However, exactly what these impacts are and how they are (or are not) related to the land ownership patterns need further examination.

This study, then, will turn to the two-fold task of 1) documenting ownership patterns in rural Appalachia based upon an in-depth study of land records in eighty counties in six central and southern Appalachian states; and 2) examine the related impacts of land ownership, particularly the areas of a) property taxation and delivery of services, b) economic development, c) agriculture, d) housing, and e) energy and environment.

CHAPTER I: LAND OWNERSHIP AS A NATIONAL ISSUE, AND AS AN APPALACHIAN ISSUE

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CHAPTER II: Who Owns the Land and Minerals? A Profile of Ownership Patterns in 80 Appalachian Counties.

> My wife was named Anna Morla. She was the third daughter of a poor farmer and I was the third son of a wealthy one, and our families lived near each other in a mountain valley with a little river running through it, one deep enough for swimming, an idyllic place, and that river was our courting road, our site of poetry and dreaming.... And when finally we ran off and got married, my father on our return, after much lecturing in his anger, did let me have sixty rocky acres of land for my own, and did come together with others of that mountain community to build us a small house, and did lend me a plow and a hoe and an ax and a cow and an ox, so in April we took our broken things to our own land and built our first fire in our own place together.
>
> --John Ehle, Time of Drums, 1970

The image of Appalachia as the land of rugged individuals, owning and working relatively small family holdings, is a strong one in the literature about the region. But unlike the young couple in Ehle's novel, today the image for so many remains a dream. The reality, documented in this study, is one of a region where the ownership of land is concentrated in a relatively few hands, dominated by absentee and corporate holders, with little available for local families to work, farm or otherwise to enjoy.

For this study, data was collected on the ownership of over 20 million acres--13 million acres of surface rights and 7 million acres of mineral rights--in 80 Appalachian counties spanning six states. Using county courthouse records, the information was gathered on over 55,000 parcels of property, owned by some 33,000 owners. To the knowledge of the Land Ownership Task Force, this data bank is the largest ever collected on the ownership of Appalachia, and possibly of rural America. As such, it will help to fill the information gap on land ownership which has been described in earlier chapters. (Tables II-1 and II-2 examine the number of surface and mineral acres examined in each state.)*

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*Using 1978-79 property tax records, this survey recorded all corporate, public and absentee owners above 20 acres and all local individual owners above 250 acres in the unincorporated portions of the county. Percentage figures refer either to the percent of the land in the survey, or the percent the survey represents of the total county surface. (The survey covered 53% of the total surface of the 80 counties.)

Before providing more detailed findings of this ownership survey, a thumbnail sketch can give the basic picture:

The ownership of Appalachia's land is highly concentrated in a few hands. Only 1% of the local population, along with absentee holders, corporations, and government agencies, control at least 53% of the total land surface in the 80 counties. This means that 99% of the population owns, at most, 47% of the land. Of the twenty million acres of land and minerals owned by over 30,000 owners in the survey, 41%--over 8 million acres--are held by only 50 private owners and 10 government agencies.

Appalachia's resources are absentee owned. Of the 13,000,000 acres of surface sampled, 72%--almost three-quarters--was owned by absentee owners; 47% by out-of-state owners and 25% by owners residing out of the county of their holdings, but in the state. Four-fifths of the mineral rights in the survey are absentee owned.

Increasingly, large corporations dominate the ownership picture. Almost 40% of the land in the sample, and 70% of the mineral rights, are corporately held. Forty-six of the top 50 private owners are corporations, among them some of the largest corporations in the country. (See Tables 13 and 14 and Section C in this chapter for a profile of these owners). While some 45% of the land in the sample is owned by individuals, well over one-half of this is owned by absentee individuals. The remaining portion of the land in the sample (16%) is owned by government and non-profit bodies--ten government agencies account for 97% of this public ownership.

For many areas of Appalachia, who owns the mineral rights is just as important as who owns the surface. Despite the fact that millions of acres of mineral rights in Appalachia are simply not recorded for tax purposes, the study discovered almost 7,000,000 mineral acres, equal to 28% of the total surface area of the 80 counties. A large portion of these mineral rights is held separately from the surface land, and bought or sold as a separate commodity, consequently having major impacts on the use of the surface land.

The remaining portion of this chapter will examine these ownership patterns more closely, looking not only at their extent, but also at where in Appalachia each pattern is most likely to occur. In the following chapters, the report will then turn to an examination of the impact of these patterns on rural Appalachian communities.

TABLE II-1

SURFACE ACRES OWNED BY TYPE OF OWNER

State	Number of Acres Individual	Number of Acres Corporate	Number of Acres Government/ Private Non-Profit	TOTAL
Alabama	2,003,106 (56%) (28%)	1,260,162 (35%) (18%)	313,487 (9%) (4%)	3,576,755 (100%) (50%)
Kentucky	708,262 (45%) (23%)	665,517 (42%) (21%)	208,483 (13%) (7%)	1,582,262 (100%) (51%)
North Carolina	601,579 (41%) (21%)	267,761 (18%) (9%)	592,087 (41%) (20%)	1,461,427 (100%) (50%)
Tennessee	1,118,457 (46%) (29%)	1,041,212 (43%) (27%)	281,165 (11%) (7%)	2,440,834 (100%) (63%)
Virginia	900,581 (49%) (26%)	539,140 (30%) (15%)	389.987 (21%) (11%)	1,829,708 (100%) (52%)
West Virginia	593,485 (26%) (13%)	1,369,203 (59%) (30%)	352,659 (15%) (8%)	2,315,347 (100%) (51%)
TOTAL	5,925,470 (45%) (24%)	5,142,995 (39%) (21%)	2,137,868 (16%) (8%)	13,206,333 (100%) (53%)

1. The percent in the upper bracket refers to the percent of the land sampled for each state.
2. The per cent in the lower bracket refers to the percent of the total surface in the sample counties in each state.

Source: Appalachian Land Ownership Study, 1980.

TABLE II-2

MINERAL ACRES OWNED BY STATE AND TYPE OF OWNER

State	Number of Acres Individual	Number of Acres Corporate	Number of Acres Government/ Private Non-Profit	TOTAL
Alabama	710,839 (45%)[1] (10%)[2]	870,073 (55%) (12%)	716 (.05%) (0%)	1,582,528 (100%) (22%)
Kentucky [3]	246,772 (40%) (8%)	357,576 (58%) (11%)	11,182 (2%) (.4%)	615,530 (100%) (19%)
North Carolina	128,671 (62%) (4%)	78,659 (38%) (3%)	0 0 0	207,330 (100%) (7%)
Tennessee	202,753 (32%) (5%)	435,046 (68%) (11%)	0 0 0	637,799 (100%) (16%)
Virginia	96,180 (15%) (3%)	557,588 (85%) (16%)	0 0 0	653,768 (100%) (19%)
West Virginia	774,032 (24%) (17%)	2,458,299 (75%) (55%)	27,345 (1%) (1%)	3,259,676 (100%) (73%)
TOTAL	2,159,247 (31%) (9%)	4,758,141 (68%) (19%)	39,243 (1%) (.2%)	6,956,631 (100%) (28%)

1. Percent of mineral acres samples in state
2. Percent of total surface acres in sample counties in each state
3. Kentucky total does not include mineral acres in several counties not available at the time of study. These were later obtained and are included in county profiles.

Source: Appalachian Land Ownership Study, 1980.

Concentration of Ownership

Of all of the indicators of land ownership, perhaps the most significant is concentration--the degree to which land is held by a relatively few owners, or the degree to which it is dispersed among the many. From other studies, one can suspect that the greater the concentration of land ownership in an area the greater the ability of a few owners to dominate the area's development; the more dispersed the ownership the more likely that economic power will be dispersed. The extensive study of land ownership in California, The Politics of Land, argued, for instance, that "almost by definition, highly concentrated ownership and control of land mean more political and economic power and greater ability to oppose contrary interests than do widely diffused ownership or control. Large landholders direct a greater portion of their earnings toward political ends than do smaller holders. And the large owner's land use decisions have greater public impact, thus giving him greater bargaining power with officials."[1]

In this study, measures of concentration will necessarily understate the extent of concentrated ownership actually present. First, the concentration of ownership can be given only amongst the owners sampled, not for all owners in a county (as this information was not collected). Secondly, on the aggregate level, it was not always possible to combine all parcels owned by the same owner, across all counties, due to ownership under different names (though this was attempted where possible).

Despite the methodological problems, the point stands clear: the ownership of land in Appalachia is highly concentrated in relatively few hands. The top 1% of the owners in the sample own 44% of the land in the sample--over 1,400 times what is owned by the bottom 1% of the owners in the sample. The top 5% own 62% of the land, contrasted to the bottom 5% who own .25%,or about 250 times less than what the top 5% own. The top half of the owners in the sample control 94% of the land, the bottom half control under 6%. (See Table IV-3)

TABLE II-3 Concentration of Ownership: Surface Acres

Percent of Owners in Sample	Percent of Surface Acres in Sample	Percent of Total Acreage in 80 Survey Counties	Concentration Index*
Top 1%	43.5	21.9	1,450
Top 5%	62.2	31.3	249
Top 25%	84.9	42.7	45
Top 50%	94.4	47.4	17
Bottom 1%	.03	.02	-
Bottom 5%	.24	.13	-
Bottom 25%	1.9	.95	-
Bottom 50%	5.6	2.82	-

* % of acres in the sample owned by top X% of owners, divided by % of sample owned by bottom X% of owners.

The ownership data for minerals is more incomplete than the data for land. Nevertheless, the pattern of concentration remains. The top 1% of the recorded mineral owners control 30% of the mineral rights in the sample--some 15,000 times greater than what is owned by the bottom 1% of the mineral owners. The top 5% of the recorded mineral owners own 62% of the recorded minerals; the top 50% own 97%.

Table II-4: Concentration of Ownership: Mineral Acres

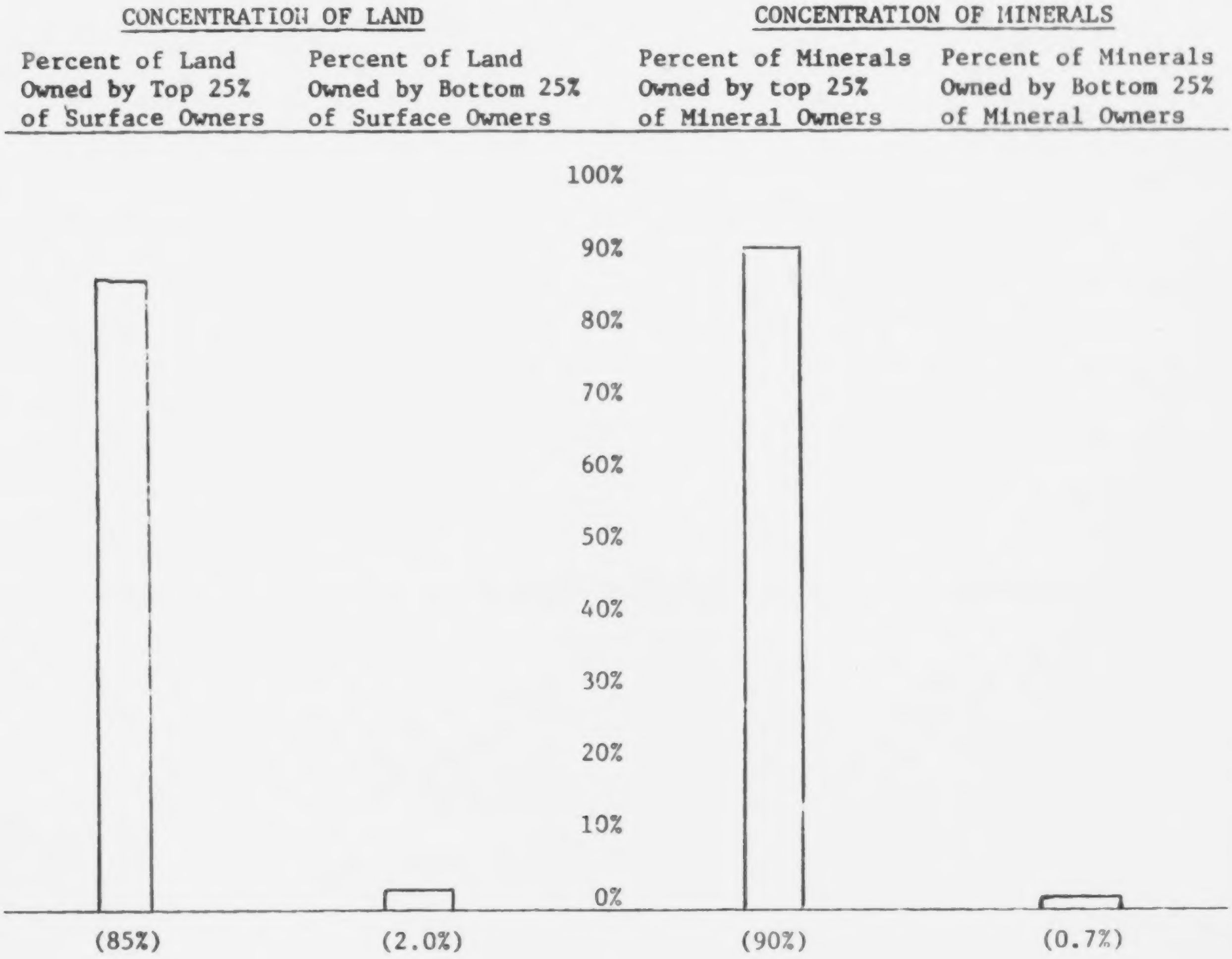
Percent of Owners in Sample	Percent of Mineral Acres in Sample	Mineral Acres As Percent of Total Surface Land	Concentration Index*
Top 1%	30%	9%	15,000
Top 5%	62%	17%	1,240
Top 25%	90%	25%	136
Top 50%	97%	27%	32
Bottom 1%	.002%	.0006	-
Bottom 5%	.05%	.01	-
Bottom 25%	.66%	.08	-
Bottom 50%	3.2%	.89	-

*Percent of sample owned by top X% of owners divided by percent of sample owned by bottom X% of owners.

In order to make comparisons amongst counties and types of counties, it is possible to develop an index which measures the degree of concentration or dispersal of land and minerals among owners. For the study, several such indices were calculated.[2] The simplest, however, is obtained by dividing the percent of land owned by the top X percent of owners by the percent of land owned by the bottom X percent of owners. The higher the index, the greater the concentration; the lower the index, the lower concentration. For instance, in the overall sample, the top 25% of the owners own 85% of the land; the bottom 25% own 1.9%, the index of concentration (at the 25% level) is 45. For the recorded mineral acres the index is 136.0.

Using this index (at the 25% level), one finds that land ownership is most concentrated in the counties with the highest coal reserves: In those counties the top 25% of the landholders own 56 times the land owned by the bottom 25% of the owners in the sample. This may be contrasted with the counties with no known coal reserves, where the index is 31. For counties with a high degree of tourism as its economic base, the index is 40. For the high agriculture counties, the concentration of ownership is lowest. There, the top 25% of the owners own 35 times that owned by the lowest 25% of the owners.

Table II-5: Concentration of Ownership in 80 Appalachian Counties



Using the index, it is also possible to identify counties where concentration is likely to be high, and thus where a few landholders are likely to be able to dominate the county's development. (See Table II-6). In six counties--Swain, N.C.; Raleigh, W. Va.; Harlan, Ky.; Wise, Va.; Sequatchie, Tn.--the index is over 100, i.e. the top 25% of the owners own over 100 times what the bottom 25% own. In 28 of the 80 counties, or 35%, the top 25% of the owners own 50 times that of the bottom 25% of the owners. Five of the top six counties are in the coalfields, primarily with corporations as large owners. Swain County, where

Table II-6: Concentration of Land Ownership: Most Concentrated and Most Dispersed Counties*

A. Most Concentrated Land Ownership Patterns--Top 20 Counties in Sample	Index of Concentration	B. Most Dispersed Land Ownership Patterns--Top 20 Counties in Sample	Index of Concentration
1. Swain, NC	150	1. Mineral, W. Va.	9.0
2. Raleigh, VA	135	2. Ashe, NC	9.6
3. Harlan, KY	116	3. Jefferson, W. Va.	11.0
4. Kanawha, West Va.	115	4. Watauga, NC	11.1
5. Wise, VA	108	5. Ohio, W. Va.	11.5
6. Sequatchie, TN	103	6. Russell, VA	11.7
7. McDowell, W. Va.	96	7. Allegheny, NC	11.9
8. Logan, W. Va.	89	8. Marrow, W. Va.	13.7
9. Bell, KY	87	9. DeKalb, Ala.	14.7
10. Van Buren, TN	86	10. Lincoln, W. Va.	15.8
11. Campbell, TN	83	11. Scott, VA	17.3
12. Scott, TN	78	12. Blount, Ala.	19.2
13. Mingo, W. Va.	66	13. Henderson, NC	19.2
14. Mitchell, NC	65	14. Lamar, Ala.	19.5
15. Marion, TN	62	15. Roane, TN	19.8
16. Dickenson, VA	61	16. Madison, NC	19.8
17. Avery, NC	61	17. Breathitt, KY	20.9
18. Braxton, W. Va.	60	18. Wayne, W. Va.	21.0
19. Anderson, TN	59	19. Knox, KY	22.2
20. Walker, Ala.	57	20. Lee, VA	22.8

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* The Concentration Index is the percent of the sample owned by the top 25% of owners divided by percent of sample owned by the bottom 25% of owners. The correlation between this measure and the more complicated Gini coefficient, which was also computed is high: .735 at the .001 level of probability.

Source: Appalachian Land Ownership Study, 1980

concentration is highest, is affected by the vast holdings in that county.

By no means is the concentration index as high for all of the counties surveyed. In 16, or 20%, of the counties surveyed it is under 20. In two counties--Mineral, West Virginia and Ashe, North Carolina, it is under 10. In other words in these counties we can find a relatively equal distribution of land. Both of these counties lie outside the coalfields, have little government ownership, and are principally agricultural in base. Both, however, are seeing increasing second home and corporate buying.

Absentee Ownership

> A private owner will use something, take care of it and keep it. But a large corporation does not have the same feelings. Nearly all of these corporations are absentee and their purposes are exploiting the land. When the coal is gone, there won't be much left.
>
> --a Harlan County resident

Like concentration, the residence of an owner can be highly significant in determining the impact of ownership patterns in a local community. In this study, residence refers to whether an owner lives in the county, out of the county but in the state, or out of the state altogether. All owners living out of the county in which their property was located were defined as being absentee. Not only are Appalachia's land and mineral resources tightly held, they are also held primarily by absentee owners.

The extent of this absentee ownership in the region is enormous, beyond even what the previous studies of land ownership in Appalachia might have suggested. Of the 33,465 owners in the survey, 81%, controlling 72% of the acreage sampled were non-local. Some 47% of the land sampled was owned by out-of-state owners: 25% was owned by owners living in the state but out of the county. Altogether, this absentee owned land in the survey is equivalent to 36% of the total surface of the land in the survey area. (See Table II-7)

The pattern of absentee ownership persists--and grows stronger--when mineral rights are considered. Of the almost 7 million acres of mineral rights in the sample, 79% are absentee owned--52% by out-of-state owners and 27% by in-state/out-of-county owners. Expressed in terms of the land surface in the survey area, 22% of the total area of the 80 counties is underlain with absentee owned minerals (and this, it should be remembered, includes only those mineral rights which are recorded.) When mineral and surface acres are combined, one finds that 15.1 million acres, or some 75% of the acreage surveyed is absentee owned.

TABLE II-7: ABSENTEE OWNERSHIP OF SURFACE ACRES AND MINERAL ACRES, BY STATE

STATE	SURFACE ACRES			MINERAL ACRES		
	Surface Acres Owned By: Out-of-State Owners	Surface Acres Owned By: Out-of-County, In-State Owners	TOTAL Surface Acres Absentee-Owned	Mineral Acres Owned By: Out-of-State Owners	Mineral Acres Owned By: Out-of-County, In-State Owners	TOTAL Mineral Acres Absentee-Owned
Alabama	1,281,170 (36%)[1] (18%)[2]	1,147,225 (32%) (16%)	2,428,395 (68%) (34%)	605,257 (38%) (9%)	724,507 (46%) (10%)	1,329,764 (84%) (19%)
Kentucky	878,894 (56%) (28%)	363,624 (23%) (12%)	1,242,518 (79%) (40%)	342,417 (56%) (11%)	151,244 (25%) (5%)	493,661 (81%) (16%)
North Carolina	970,162 (66%) (33%)	319,338 (22%) (11%)	1,289,500 (88%) (44%)	127,705 (62%) (4%)	66,348 (32%) (2%)	194,053 (94%) (6%)
Tennessee	905,749 (37%) (23%)	788,384 (32%) (20%)	1,694,133 (69%) (43%)	329,599 (52%) (8%)	203,084 (32%) (5%)	532,683 (84%) (6%)
Virginia	991,509 (54%) (28%)	314,638 (17%) (9%)	1,306,147 (71%) (37%)	429,132 (66%) (12%)	127,483 (17%) (4%)	556,615 (83%) (16%)
West Virginia	1,206,539 (52%) (27%)	384,070 (17%) (8%)	1,590,609 (69%) (35%)	1,781,870 (55%) (40%)	632,522 (19%) (14%)	2,414,392 (74%) (54%)
TOTAL	6,234,023 (47%) (25%)	3,317,279 (25%) (13%)	9,551,302 (72%) (38%)	3,615,980 (52%) (14%)	1,905,188 (27%) (8)	5,521,168 (79%) (22%)

1. (%) represents percent of surface acres in the sample for that state.
2 (%) represents percent of total surface acres in the survey counties in that state.

Source: Appalachian Land Ownership Study, 1980.

The vast majority of these absentee owners--87% of them--are in the category of relatively small owners, owning between 20-250 acres. However, the total acreage these small owners control is relatively low--representing only 18% of the absentee owned acres in the sample. In fact, when acres controlled are examined rather than number of owners, one finds that as the holdings in Appalachia get larger and more concentrated, so also are they more likely to be absentee. Of holdings between 20 and 500 acres, 64% are locally held. But, of holdings above 1,000 acres, the reverse is true--75% of them are held by out-of-state or out-of-county owners.[3]

From previous studies of land ownership in Appalachia, one might have expected absentee ownership to predominate primarily in the major coal counties. The expectation does not hold. Absentee ownership is pervasive throughout the region, regardless of the rural economic base. In fact, of the counties with no coal reserves or only minimal coal reserves, 73% of the land is absentee held, compared to 72% for the major coal counties. Outside the coalfields, absentee coal owners are replaced by giant timber companies, federal holdings, second home owners or recreation developers.

In one-fourth of the counties in the study, the absentee owned land in the sample represented over one-half of the total land surface in the county. The counties are indicative of the kinds of absenteeism found throughout the region. (See list of these counties in Table II-8). In Swain County, vast federal holdings are joined by corporate developers and second home owners to leave little land held by local individuals: in that county, for instance, 80% of the land is in the hands of the federal government. Of the remaining land, 23% is owned by 21 companies, 15 of which are Florida based land development companies; and 40% is owned by out-of-county individuals. In the plateau counties of Sequatchie and Van Buren in Tennessee, the holdings of one timber company, J. M. Huber Corporation, account for much of the absentee owned land. In the mountainous coal regions of McDowell and Mingo or Logan counties in West Virginia; Knott, Harlan and Martin, Kentucky; Wise, Virginia or Campbell, Tennessee, absentee based coal and energy companies dominate the scene.

Table II-8; Counties with Greater than 50% Absentee Ownership of County Surface

County	Percent of County Surface Absentee Owned	Percent of Sample Absentee Owned	Number of Absentee Owned Acres
1. Swain, NC	94.0	99%	315,139
2. Sequatchie, TN	81.1	98%	141,692
3. McDowell, W. Va.	79.3	94%	270,647
4. Mingo, W. Va.	67.9	90%	183,717
5. Van Buren, TN	66.8	71%	108,578
6. Clay, NC	63.6	97%	85,048
7. Logan, W. Va.	63.0	71%	149,891
8. Marion, TN	62.9	85%	203,864
9. Dickenson, VA	60.6	92%	128,845
10. Campbell, TN	58.3	76%	168,299
11. Shelby, Ala.	58.0	87%	297,026
12. Knott, KY	57.6	82%	131,195
13. Harlan, KY	57.6	78%	172,757
14. Martin, KY	57.2	91%	84,590
15. Bledsoe, TN	56.8	75%	146,946
16. Winston, Ala.	56.1	86%	206,202
17. Morgan, TN	55.9	81%	192,926
18. Jackson, NC	55.3	89%	173,700
19. Wise, VA	54.6	85%	143,723
20. Scott, TN	52.6	70%	181,217
21. Bland, VA	51.4	73%	123,080

Source: Appalachian Land Ownership Study, 1980

Corporate Ownership of Land and Minerals

> "Somewhere we lost ourselves. I think it was when the companies bought up the land."
> --A West Virginia farmer

The largest, and most likely to be absentee, of Appalachia's non-government owners are corporations. Altogether, corporations own 5,142,995 acres of the land surveyed, amounting to 20% of the land mass in the eighty counties. The corporate land is held by some 3,100 owners, with a relatively large average holding of 1,660 acres each. Of these 3,100 companies, the top 46 own 56% of all of the corporate land in the sample. In 24 of the 80 counties, corporately owned land accounted for more than 50% of the surface acres surveyed.

In addition, the corporations own 4,758,141 acres of mineral rights, representing 68% of the mineral rights surveyed. Expressed as percent of the surface land in the counties, these corporately-held mineral rights underlie 19% of the surface. The mineral rights are held by fewer owners and in larger parcels than the surface. Only 1,100 owners own this almost 5 million acres of minerals, an average plot of 4,087 acres. Overall, in 46 of the 64 counties where data on mineral wealth was recorded, corporations own over one-half of the mineral acres.

While much of Appalachia's land and mineral wealth is thus corporately owned, little of it is held by local businesses. Of the just over five million corporate acres in the survey, 84% are absentee owned; 60% by out-of-state owners. For the mineral wealth of Appalachia, the relationship between corporatism and absenteeism increases. Of the 4.8 million acres of corporately owned mineral acres in the survey, 89% are absentee owned; 62% by out-of-state corporations.[4] These absentee corporate owners are also likely to be the larger of Appalachia's owners. Overall, 46 of the top 50 owners in the survey are corporations--only two of them have their head office in the county in which their major holdings are found. While the average plot of land held by locally owned corporations is only 75 acres, it is 1,400 acres for the out-of-county corporation and 2,670 acres for the out-of-state corporations.

While absentee ownership is found to be pervasive throughout the region, corporate ownership is more predominant in certain pottions of the region than in others. In the "high coal" counties in the sample, 50% of the land in the sample is corporately held, compared to 31% in the high agricultural counties, and more than double the rate of corporate ownership in counties with tourism as its base. (See Table II-9). Not only do the coal counties have greater corporate ownership than the other county types, but the level of corporate ownership also increases with the level of coal reserves. In the high coal counties, with over 100 million tons in reserves, 50% of the land in the sample is corporately held. In the medium coal counties, with 10 to 1,000 million tons of known reserves, 31% of the land in the sample is owned by corporations; and in the counties without coal resources, 20%--only two-fifths the rate of corporate ownership in the high coal counties. The same pattern is true for mineral rights. Four-fifths of the mineral rights in the survey are found in the 33 counties with a high level of known coal reserves. Of these, 72% are corporately held.[5]

Table II-9: Ownership Patterns by Nature of Owner and by Type of County

Type of County	Acres Owned by Individuals	Acres Owned by Corporations	Acres Owned by Government/ Private Non-Profit Owners	TOTAL
High Coal Counties (33)	2,920,090 (40%)[1] (21%)[2]	3,652,272 (50%) (27%)	752,919 (10%) (6%)	7,325,281 (100%) (54%)
High Agriculture Counties (30)	3,109,262 (53%) (25%)	1,775,043 (31%) (15%)	928,402 (16%) (8%)	5,812,707 (100%) (48%)
High Tourism Counties (19)	1,871,352 (48%) (29%)	882,717 (23%) (14%)	1,098,548 (29%) (17%)	3,852,617 (100%) (60%)

1. Percent of land in sample for that type of county.
2. Percent of total surface in counties of that type.
3. Number of counties in sample.

High coal counties have known reserves greater than 100 million tons.
High agriculture counties have annual sales of over $5 million (based on 1974 Census of Agriculture).
High tourism counties have more than 25% of their service industry in tourism and recreation oriented services (based on 1974 Census of Services).

If corporate ownership of land, with its related characteristics of being absentee held and in large plots, is most likely to be extensive in counties with the most coal reserves, a list of the 10 most corporately held counties in the sample should come as no surprise. (See Table II-10). Four of the top five most corporately held counties are in southern West Virginia, the so-called "heart of the billion dollar coalfields." In these four counties, almost 90% of the land in the sample is corporately held, accounting for over two-thirds of all of the land in those counties. Campbell County, Tennessee is dominated principally by one corporate owner, Koppers Company of Pittsburgh, which owns 96,000 acres in the county which it plans to develop for synthetic fuel production. Wise County, Virginia and Harlan County, Kentucky, are owned by an assortment of coal landholding companies and Shelby County, Alabama, by the vast holdings of four paper companies, U. S. Steel, and Southern Railroad. Of these 10 most corporately held counties, only Van Buren and Sequatchie, Tennessee do not appear in the list of counties with high coal reserves, though they are affected by the ownership of the J. M. Huber Corporation, a timber concern and the largest corporate holder found in the survey.

Table II-10: Counties with Major Corporate Ownership of Surface Land

COUNTY	Percent of County	Percent of Sample	Number of Corporately Owned Surface Acres
1. McDowell, W. Va.	75.9%	89.9%	258,984
2. Logan, W. Va.	67.2%	92.6%	196,239
3. Raleigh, W. Va.	64.4%	91.8%	249,334
4. Mingo, W. Va.	62.5%	82.6%	169,228
5. Sequatchie, TN	60.6%	68.2%	105,923
6. Campbell, TN	57.5%	75.3%	166,000
7. Harlan, KY	55.2%	74.7%	165,733
8. Van Buren, TN	50.9%	63.3%	82,719
9. Shelby, Ala.	45.7%	68.7%	233,527
10. Wise, VA	45.2%	70.2%	118,944

Source: Appalachian Land Ownership Study, 1980.

In the case of mineral rights, corporations may own several seams of minerals at varying depths. When the acreage of these seams is combined, the result is greater than 100% of the total surface acres of a county. Thus, in looking at the 10 counties with the highest degree of corporately held mineral rights (Table II-11), one can see that in Lincoln and McDowell counties, West Virginia, corporately owned mineral rights are equivalent to 120% and 105%, respectively, of the total land surface in each county! One can also see that 8 of the 10 counties with the greatest degree of corporation ownership of minerals are in West Virginia. More than anything, this may be due primarily to the fact that the mapping of mineral rights for tax purposes is more extensive there than in other states. As discussed earlier, in many counties, mineral rights simply may not be reported to the assessor, or if they are, they are vastly understated. In Perry County, Kentucky, for instance, the Kentucky River Coal Company reports owning 26,272 acres of coal for tax purposes, while in actuality it owns over 75,000 acres of minerals in the county.

Table II-11: Counties with Major Corporate Ownership of Mineral Rights

County	Corporate Mineral Acres as Percent of County Surface	Corporate Mineral Acres as Percent of Mineral Acres Sampled	TOTAL Corporately Owned Mineral Acres
1. Lincoln, W. Va.	120.4	91.8	337,385
2. McDowell, W. Va.	104.9	86.2	357,935
3. Mingo, W. Va.	97.5	85.9	264,046
4. Marion, W. Va.	89.7	83.1	178,519
5. Raleigh, W. Va.	87.1	88.7	337,272
6. Logan, W. Va.	84.8	74.3	247,595
7. Marshall, W. Va.	77.7	99.1	151,219
8. Ohio, W. Va.	77.1	89.2	52,284
9. Dickenson, VA	71.7	96.2	152,422
10. Buchanan, VA	65.5	74.6	213,165
11. Martin, KY	59.6	60.2	88,070

Source: Appalachian Land Ownership Study, 1980.

Regardless of the case of underreporting by corporations of their minerals, the case studies make clear that the ownership of minerals underground may strengthen and expand the corporate control gained through surface ownership. In the case of Lincoln County, West Virginia for example, corporations own only 10% of the surface in the county, while they control mineral acres equivalent to 120% of the county's total land mass--and the county has suffered, as a consequence, the same negative impacts experienced by counties with extensive corporate domination of surface lands. Of the 64 counties in which mineral rights are recorded, however incompletely, corporately controlled mineral rights represent a greater degree of the county's surface than does corporately held land in 26 of them.

Because the ownership of minerals may extend the control of an area gained through surface ownership, the two may be combined to give a more complete Index of Resource Control (the percent of surface owned + percent of minerals, expressed as percent of surface).[6] The Index for corporate ownership is 39, meaning that the combined mineral and surface ownership of corporations in the sample is equal to 39% of the total surface of the 80 counties. For the counties with the greatest known coal reserves, the Index rises dramatically to 56--i.e. corporately owned surface and mineral acres are equal to well over one-half of the total land mass in these counties. In eight of the counties, the combined surface and recorded mineral acres owned by corporations is equivalent to 100% or more of the county's surface acres. These are McDowell, W. Va. (181); Mingo, West Va. (161); Logan, West Va. (152); Raleigh, W. Va. (151); Lincoln, W. Va. (130); Dickenson, VA (115); Sequatchie, TN (104); Martin, KY (100%).

C. A Profile of the Top Corporate Owners

Who are these top corporate owners of Appalachia? Tables II-13 and II-14 provide a listing of the 50 top non-governmental surface and mineral owners in the survey.[7] Twenty-four of the top mineral owners are not among the large surface owners. Together, these 74 top private owners (the 50 surface and mineral owners and the 24 additional holders of minerals only) control almost one-third of the 20,000,000 acres surveyed. Of the top 50 surface holders, 46 are corporations, owning 2,884,569 acres--over half what is owned by the 3,100 corporations identified in the survey. Of the top 50 mineral owners, 42 are corporations, owning 2,815,790 mineral acres or 60% of all the corporately held minerals in the sample.

TABLE II-12

Top 50 Private Surface and Mineral Owners By Type of Business Activity

	Number of Surface Acres	Number of Mineral Acres	Number of Combined Acres (Surface + Mineral)
Coal and coal lands	764,333 (25.4%) [1] (17) [2]	755,928 (24.4%) (14)	1,520,261 (24.9%) (19)
Oil, gas, other energy	294,323 (9.8%) (6)	945,375 (30.5%) (8)	1,239,698 (20.3%) (11)
Wood and timber products	898.158 (29.9%) (9)	151,562 (4.9%) (3)	1,049,720 (17.2%) (9)
Steel and other metals	444,910 (14.8%) (5)	317,531 (10.2%) (6)	762,441 (12.5%) (8)
Railroads	255,286 (8.5%) (2)	326,232 (10.5%) (4)	581,518 (9.5%) (4)
Miscellaneous Corporations	227,559 (7.6%) (7)	319,162 (10.3%) (7)	546,721 (8.9%) (13)
Individuals	121,753 (4.0%) (4)	279,706 (9.0%) (8)	401,459 (6.6%) (10)
TOTALS	3,006,322 (100.0%) (50)	3,095,496 (99.8%) (50)	6,101,818 (99.9%) (74)

1. Percent of total surface or mineral acres held by top 50 holders.
2. Number of holders.

Source: Appalachian Land Ownership Study, 1980.

Some of these large owners in Appalachia represent the largest and most well-known corporations in America. Others are relatively small and anonymous nationally, yet like the larger corporations they possess through their vast holdings tremendous ability to influence both the exploitation of nationally-needed resources and the course of community development where their holdings are located. For this reason, public policies in Appalachia must take into consideration the plans and powers of the corporate owners of the region's land and mineral wealth. In order to do so, knowledge of who these major corporate owners are and why they are holding the resources is essential.

As can be seen in Table II-12, of the top 50 surface owners, 9 are wood and timber companies, owning an average of almost 100,000 acres each. The next largest owners of surface lands are companies whose principal business is coal mining or holding coal lands. Some 17 of these coal companies own 764,323 acres, followed by steel and other metal companies (444,910 acres), oil, gas and energy companies (294,323 acres), railroads (255,286 acres), miscellaneous corporate holders (227,559 acres), and individuals (121,753 acres).

For the mineral owners, the picture changes--oil and gas companies account for 910,309 acres of mineral rights, most of which are not oil and gas, but coal. Coal and coal land companies come next with 764,609 acres; railroads have 326,232 acres, and steel companies 257,331 acres. Timber companies, who are principal surface owners, have far fewer acres of mineral rights recorded on the books (though they may, in fact, own them).

A better understanding of these corporate holdings can be gained by looking more in depth at each corporate type.

Coal and Coal Lands

When surface and mineral acres are combined, 17 coal mining and coal land owners own 1,520,261 acres. The surprising characteristic of these owners is that only three: Pittston, Alabama By-Products, and Blue Diamond Coal Company are engaged primarily in the business of mining coal. The others simply lease their land and minerals to coal operators who do the mining.

In 1965, Dun's Review of Modern Business wrote of these coal land corporations, "for all their small numbers...these coal royalists hold what may be one of the most lucrative investments in all of America."[8] The "coal royalists," as they are called, simply oversee their land (usually through a local manager) negotiate leases and collect the royalties, currently as high as $2.00 to $3.00 per ton. The companies who lease the land for the mining incur most of the risks.

TABLE II-13

50 Top Surface Owners

In 30 Appalachian Counties

NAME	ADDRESS OF HEADQUARTERS	PRINCIPAL BUSINESS OF COMPANY	TYPE OF COMPANY	TOTAL SURFACE ACRES	PRINCIPAL LOCATION OF HOLDINGS
1. J. M. Huber Corp.	Rumson, New Jersey	diversified products, expecially timber & wood products	family	226,805	Tennessee, Kentucky
2. Bowaters Corporation (Hiwassee Land Co.)	London, England	wood products	public	218,561	Tennessee
3. N & W Railroad (Pocahontas Land & Pocahontas-Ky)	Roanoke, Virginia	railroad, transportation	public	178,481	West Virginia, Kentucky, Virginia
4. Koppers Co.	Pittsburgh, PA	diversified chemicals & metals, coal gasification	public	169,796	Tennessee
5. U. S. Steel	Pittsburgh, PA	steel	public	168,911	Alabama, Kentucky Tennessee, West Virginia
6. Georgia Pacific	Atlanta, GA	wood products	public	139,441	West Virginia, Virginia, Kentucky
7. Pittston Corporation	New York, NY	coal	public	137,650	Virginia
8. Tenneco, Inc. (Tennessee River, Paper and Pulp)	Houston, TX	oil, land, packaging	public	98,751	Alabama

Source: Appalachian Land Ownership Study, 1980.

NAME		ADDRESS OF HEADQUARTERS	PRINCIPAL BUSINESS OF COMPANY	TYPE OF COMPANY	TOTAL SURFACE ACRES	PRINCIPAL LOCATION OF HOLDINGS
9.	Continental Oil (Consolidated Coal Co.)	Stamford, Conn.	oil, gas, petrochemicals, coal	public	84,403	West Virginia, Virginia, Kentucky
10.	Gulf States	Tuscaloosa, Ala.	paper & wood products	public	78,054	Alabama
11.	Chessie Systems, Inc. (Western Pocahontas, C&O Railroad)	Baltimore, MD	holding company, transport, petrochemical	public	76,805	Kentucky, West Virginia
12.	Weyerhauser	Seattle, Washington	wood products	public	65,005	Alabama
13.	Coal Creek Mining & Manuf.	Knoxville, TN	coal and land	private	64,374	Tennessee
14.	Champion International	Stamford, Conn.	building materials, paper, furniture	public	63,405	Alabama, North Carolina
15.	Penn Virginia Corp.	Philadelphia, PA	coal land	public	62,893	Virginia
16.	Berwind Land Co. (Kentland Company)	Philadelphia, PA	coal and natural resources; other diversified products	private	60,881	West Virginia, Kentucky Virginia
17.	Kentucky River Coal	Lexington, KY	coal lands	private	56,279	Kentucky
18.	Bethlehem Steel	Bethlehem, PA	steel and steel products	public	47,132	Kentucky, West Virginia
19.	Mead Corporation (Georgia Kraft Co.)	Atlanta, GA	paper and wood products	public	46,765	Alabama
20.	Rowland Land Company	Charleston, W. VA	coal land	family	44,867	West Virginia
21.	Bruno Gernt Estate	Allardt, TN	coal & timber	family	42,317	Tennessee

50 Top Surface Owners
In 80 Appalachian Counties
Page # 3

NAME	ADDRESS OF HEADQUARTERS	PRINCIPAL BUSINESS OF COMPANY	TYPE OF COMPANY	TOTAL SURFACE ACRES	PRINCIPAL LOCATION OF HOLDINGS
22. Union Carbide	New York, NY	chemicals, carbon products	public	41,060	West Virginia
23. Brimstone Company	Dover, Delaware	coal land	private	40,261	Tennessee
24. Soterra, Inc.	Delaware, Ohio	unknown	private	39,917	Alabama
25. Stearns Coal and Lumber	Stearns, Kentucky	coal land, timber	family	38,934	Tennessee
26. The Southern Company (Alabama Power)	Atlanta, GA	utility	public	38,736	Alabama
27. Plateau Properties	Crossville, TN	land and mining	private	38,430	Tennessee
28. Lykes Resources, Inc. (Youngston Mine)	Pittsburgh, PA	steel	public	38,071	West Virginia, Virginia
29. Alabama By-Products	Birmingham, Ala.	coal, coke, chemicals	public	34,365	Alabama
30. American Natural Resources (Virginia Iron Coal & Coke)	Detroit, Michigan	gas & coal	public	33,155	Virginia, Kentucky
31. Beaver Coal Company	Beckley, W. Va.	coal lands	family	32,994	West Virginia
32. St. Joe's Minerals (Tennessee Consolidated Coal)	Jasper, TN	coal, other minerals	public	32,323	Tennessee
33. Hugh D. Faust	Knoxville, TN	coal land & timber	individual	32,021	Tennessee
34. Jim Walter Corp.	Birmingham, Ala.	pipe, metals, coal, building materials	public	31,721	Alabama
35. Dingess Rum Coal Co.	Huntington, W. Va.	coal lands	private	31,282	West Virginia

50 Top Surface Owners
In 80 Appalachian Counties
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NAME	ADDRESS OF HEADQUARTERS	PRINCIPAL BUSINESS OF COMPANY	TYPE OF COMPANY	TOTAL SURFACE ACRES	PRINCIPAL LOCATION OF HOLDINGS
36. Crescent Land Co.	Charlotte, NC	land development	private	31,200	North Carolina
37. Carolina Rite Company	Miami, Florida	timber/pulp	private	30,330	North Carolina
38. Mower Lumber	New York, NY	timber, coal lands	private	29,792	West Virginia
39. Cole Interests	Huntington, W. Va.	coal lands	private	27,385	West Virginia
40. Albert Holman	Tuscaloosa, Ala.	coal lands	individual	26,284	Alabama
41. Kentenia Corp.	Boston, Mass.	coal lands	private	25,335	Kentucky
42. Cotiga Development Corp.	Philadelphia, PA	coal lands	private	25,081	West Virginia
43. Eastern Gas & Fuel Co. (Eastern Associated Coal)	Boston, Mass.	coal, coke, gas	public	24,516	West Virginia
44. American Electric Power (Franklin Real Estate)	New York, NY	utility	public	22,775	Virginia, Kentucky
45. Blue Diamond Coal Co.	Knoxville, TN	coal and land	private	22,206	Tennessee
46. Eastern Property Trading Company	Atlanta, GA	real estate	private	22,120	Alabama
47. Quaker State Oil (Kanawha Hocking and Valley Camp Coal)	Oil City, PA	oil	public	21,175	West Virginia
48. Wilson Wyatt	Louisville, KY	attorney	individual	21,131	Tennessee
49. Grandview Mining Co.	Chattanooga, TN	coal & land	family	21,116	Tennessee
50. National Steel	Pittsburgh, PA	steel	public	21,000	Kentucky
TOTAL				3,006,322	

TABLE II-14

50 Top Mineral Owners

In 80 Appalachian Counties

NAME	ADDRESS OF HEADQUARTERS	PRINCIPAL BUSINESS OF COMPANY	TYPE OF COMPANY	TOTAL MINERAL ACRES	PRINCIPAL LOCATION OF HOLDINGS
1. Columbia Gas System	Wilmington, Delaware	natural gas, holding company	public	342,236	West Virginia
2. N & W Railroad (Pocahontas-Ky. Pocahontas Land)	Roanoke, Virginia	railroad transportation	public	201,950	Kentucky West Virginia
3. Continental Oil (Consolidation Coal)	Stamford, Conn.	oil, gas, petrochemicals, coal	public	193,061	West Virginia, Kentucky
4. Pittston Corporation	New York, NY	coal	public	185,254	Virginia
5. Occidental Petroleum (Island Creek Coal)	Los Angeles, CA	gas, oil, petrochemicals, coal	public	144,741	West Virginia, Kentucky, Virginia
6. Berwind Land Company	Philadelphia, PA	coal and natural resources	private	108,561	Kentucky
7. American Natural Resources (Virginia Iron Coal and Coke)	Detroit, Michigan	gas and coal	public	80,705	Virginia
8. U. S. Steel	Pittsburgh, PA	steel	public	71,601	Alabama, Tennessee West Virginia,
9. Republic Steel	Cleveland, Ohio	steel	public	67,252	Alabama
10. Georgia Pacific	Atlanta, GA	timber	public	67,027	West Virginia
11. First National Bank of Birmingham	Birmingham, Ala.	bank, holding company	private	66,991	Alabama

Source: Appalachian Land Ownership Study, 1980.

NAME	ADDRESS OF HEADQUARTERS	PRINCIPAL BUSINESS OF COMPANY	TYPE OF COMPANY	TOTAL MINERAL ACRES	PRINCIPAL LOCATION OF HOLDINGS
12. Diamond Shamrock (Falcon Seaboard)	Cleveland, Ohio	oil, gas, chemicals, coal	public	66,928	Kentucky
13. Deep Water Properties (held through First National Bank, Birmingham)	Birmingham, Alabama	financial trust	private	66,038	Alabama
14. Cherokee Mining	Houston, TX	coal	individual	60,294	Alabama
15. National Steel	Pittsburgh, PA	steel	public	60,000	Kentucky
16. Reynolds Metals (Reynolds Minerals)	Richmond, VA	ore, chemicals, aluminum	public	58,000	North Carolina
17. Wilson and Maryanne Wyatt	Louisville, KY	attorney	family	57,614	Tennessee
18. Chessie Systems (Western Pocahontas or C&O Railroad)	Baltimore, MD	holding company, transportation, chemicals	public	56,830	West Virginia, Kentucky
19. Rowland Land Company	Charleston, W. Va.	coal lands	family	54,474	West Virginia
20. North Alabama Mineral Division Company	no address	minerals	unknown	50,141	Alabama
21. J. M. Huber	Rumson, New Jersey	diversified products, extensive timber & wood products	public	47,759	Tennessee
22. Quaker State Oil Co. (Kanawha Hocking and Valley Camp Coal)	Oil City, PA	oil	public	47,711	West Virginia
23. Wesley West	Houston, TX	coal land	individual	46,682	Alabama

50 Top Mineral Owners
In 80 Appalachian Counties
Page # 3

NAME	ADDRESS OF HEADQUARTERS	PRINCIPAL BUSINESS OF COMPANY	TYPE OF COMPANY	TOTAL MINERAL ACRES	PRINCIPAL LOCATION OF HOLDINGS
24. Beaver Coal Company	Beckley, West Va.	coal land	private	44,807	West Virginia
25. Plateau Properties	Crossville, TN	land and mining	private	42,038	Tennessee
26. Union Carbide	New York, NY	chemical, carbon products	public	41,689	West Virginia
27. Alabama By-Products	Birmingham, Ala.	coal, coke, chemicals	public	41,001	Alabama
28. Charleston National Bank	Charleston, W. Va.	bank, holding	private	40,566	West Virginia
29. Cotiga Development Co.	Philadelphia, PA	coal lands	private	39,648	West Virginia
30. Mower Lumber	New York, NY	timber, coal lands	private	36,776	West Virginia
31. Eastern Gas & Fuel Co. (Eastern Associated Coal Co.)	Boston, Mass-	coal, coke, gas	public	35,066	West Virginia
32. Sun Oil (Shamrock Coal)	Radnor, Pa	oil company	public	34,927	West Virginia
33. Southern Railroad	Washington, DC	rail transport	public	34,877	Alabama
34. Coal Creek Mining and Manufacturing	Knoxville, TN	coal lands	private	34,042	Tennessee
35. Lykes Resources, Inc. (Youngston Mine)	Pittsburgh, PA	oil	public	33,972	West Virginia
36. L & N Railroad	Lexington, KY	railroad	public	32,575	Alabama
37. Penn Virginia Corp.	Philadelphia, PA	coal lands	public	32,267	Virginia
38. Dayton Hale	Tuscaloosa, Alabama	banker, real estate	individual	31,600	Alabama

NAME	ADDRESS OF HEADQUARTERS	PRINCIPAL BUSINESS OF COMPANY	TYPE OF COMPANY	TOTAL MINERAL ACRES	PRINCIPAL LOCATION OF HOLDINGS
39. Julius Doochin	Nashville, TN	contractor, coal lands	individual	31,000	Tennessee
40. Dingess Rum Coal Co.	Huntington, W. Va.	coal lands	private	30,186	West Virginia
41. Neva McMullen	Washington, N.C.	coal lands	individual	29,901	West Virginia
42. Drummond Coal Co.	Jasper, Ala.	coal mining & coal lands	family	29,038	Alabama
43. W. R. Burt	Lexington, KY	coal and land	individual	28,701	Alabama
44. Bruno Gernt Estate	Allardt, TN	coal & timber	family	28,354	Tennessee
45. Cole Interests	Huntington, W. Va.	coal lands	individual	28,046	West Virginia
46. Southern Land and Exploration	Tuscaloosa, Ala.	coal lands	private	27,284	Alabama
47. Consolidated Goldfields (Goldfield Mining Corp.)	London, England	multinational mining interests including South Africa	public	26,706	Tennessee
48. National Shamuts Bank of Boston	Boston, Mass.	bank, holding	private	26,453	Virginia
49. Kentucky River Coal Co.	Lexington, KY	coal lands	public	26,272	Kentucky
50. Hagan Estate	Tazewell, Virginia	coal and land	individual	25,854	Virginia
TOTAL				3,095,496	

On the national economic scene, these coal land holding companies are small, and often relatively unknown. Even their trade group, the National Coal Lessers' Association is not highly visible. Yet, locally, these companies are often viewed as having enormous power. Though single decisions of their offices, the land use of huge portions of certain counties can be affected. Coal operators are dependent upon good relations with them to negotiate the leaseholds necessary to mine the coal, which often provides the jobs in an area. Tenants living in old coal camps on their property may also be dependent upon these companies' good will for housing. Whole communities are potentially affected by the taxes and economic base which their resources provide.

Despite their profitability and power, these coal royalists are often absentee and relatively anonymous. Only one of the owners, Plateau Properties, has its headquarters in the county where most of its holdings are located--most are headquarted outside the region altogether. Only three--Pittston, Penn-Virginia, Alabama By-Products--are public companies (in the sense that they have over $1 million in assets and over 500 shareholders, and are thus required to register public information with the SEC.) Others are often family owned, relatively small operations with merely a post office box as their address or a small office serving as their corporate headquarters. A lawyer in West Virginia describes his attempts to research the Cotiga Development Company, a Philadelphia based operation which owns 25,081 surface acres and 39,648 mineral acres in Mingo County:

> Two years ago I wanted to do some research into the background of Cotiga.... I wanted to see the makeup of a company such as Cotiga. I went to Cotiga's office, which you have some trouble finding because it's a one-room office in a suburban home and not only is it the office for Cotiga Development Company, one of the largest landowners in Mingo County, it's also the office, according to the mailbox, for several other land companies in West Virginia. Thompson wasn't home and in talking to one of the secretaries in the office next door, she said, 'Well, he comes in one or two days a week. And sometimes there's a secretary that comes in to answer letters.' But what was interesting to me was how little it really took once you've acquired the land, to keep it going.[9]

According to interviews in Mingo County, the Cotiga holdings were acquired by an enterprising sewing machine salesman who travelled the hills of the county early in the century trading sewing machines for land. Others of these companies also have interesting backgrounds:

> Coal Creek Mining and Manufacturing: Along with its affiliates Poplar Creek Coal and Winter Gap Coal Company, Coal Creek owns 64,374 acres in Anderson, Campbell, Morgan and Scott counties in Tennessee. The company is headquartered in Knoxville and is controlled by approximately 155 shareholders throughout the United States. Most of its properties were acquired before the turn of the century, and have remained virtually the same since that time.[10]
>
> The Brimstone Company: Owned primarily by John Rollins, a Delaware businessman and financier who also controls the Orkin Pest Control Company, trucking lines, Jamaican resorts, and a series of television and radio stations--to name a few. Rollins acquired the 40,261 acres in Scott and Morgan Counties in Tennessee from the family of Senator Howard Baker in 1972. Senator Baker was a principal partner in the operations until 1977, when charges of conflicts of interest were raised concerning mining and potential recreation developments on the property and legislation supported by the Senator.[11]
>
> Kentucky River Coal and Coke Company: Located in Lexington, Kentucky, Kentucky River owns thousands of acres of land and mineral rights throughout eastern Kentucky--as many as 180,000 acres according to some published reports. This survey found 82,551 recorded on the tax rolls. Most of this property was obtained by John C. C. Mayo, a schoolteacher from Paintsville, Kentucky who in the late nineteenth century received backing from eastern financiers, becoming one of east Kentucky's most successful coal buyers.[12]
>
> Kentenia Corporation: Owning 25,335 acres, primarily in Harlan County, this company is based in Boston, Massachusetts. The company was founded in the early 1900's by Warren Delano, a wealthy northerner and uncle of Franklin Delano Roosevelt, who invested heavily in the eastern Kentucky Region.[13]

Historically, most of these coal land companies have held their land and minerals for decades, many since before the turn of the century. However, the last decade has seen in Appalachia a new wave of corporate amalgamation in the coalfields. With the energy crisis, as more, often multinational, corporations have moved into the energy field, a number of these coal land companies have been bought by larger interests. Look at some of the examples of the trend:

> --In east Tennessee, the 50,940 acres of Tennessee Land and Mining, owned for decades by a family from Scarsdale, New York, has been bought by the Koppers Company, a multinational metal and chemical corporation from Pittsburgh. In 1980, Koppers also bought the 36,092 acres owned by High Top Coal Company, giving it 169,376 acres in four eastern Tennessee counties.[14]

- In Tennessee and Kentucky, the J. M. Huber Corporation purchased the 65,000 acres of the American Association, Ltd., a British owned firm formerly controlled by the interests of Sir Denys Flowerdew Lowson, a former Lord Mayor of London. American Association had developed Middlesboro and Cumberland Gap in the 1890's.[15] The largest owner found in the study, Huber owns 227,000 acres in the survey area.

- In Kentucky and Virginia, the properties of Virginia Iron Coal and Coke Company have been purchased by Bates Manufacturing Company. Shortly afterwards they were acquired by American Natural Resources Corporation, a diversified energy corporation from Detroit.[16]

- In Tennessee, a family held coal mining and landholding company, the Tennessee Consolidation Coal Company, has been purchased by St. Joe's Minerals. St. Joe's has also signed an agreement with Scallop Coal Corporation, a subsidiary of Royal Dutch Shell, jointly to develop its coal properties throughout the region, with much of the new production possibly to be used for export.[17]

- In 1979, a tentative agreement was signed for the Blue Diamond Coal Company of Knoxville to be acquired by the Standard Oil Company of Indiana (AMOCO). The deal was later dropped by Standard Oil, partially because of uncertainties surrounding some of Blue Diamond's lease-holdings in eastern Kentucky.[18]

The trend towards ownership and control of Appalachia's land and energy resources by larger, more multinational units, can be seen as we turn to ownership by the second largest category of owners, the oil, gas, and energy conglomerates.

Oil, Gas and Energy Companies

The last decade has seen growing national concern over the extent of control of the nation's energy resources by a small number of holders, particularly the oil companies. In 1963, Gulf Oil took over Pittsburgh and Midway Coal Company; in the years following, other companies followed suit. According to the Office of Technology Assessment of the U. S. Congress, these "horizontally integrated" companies will mine about 385-465 million tons of coal by 1986, representing almost one-half of the total domestic consumption of coal used for energy purposes.

As they acquired coal companies, oil companies also gained control over vast amounts of mineral reserves. According to the President's Coal Commission, oil and gas companies now own 41.1% of all privately owned coal reserves in the country, concentrated primarily in the west. Six of the top ten national coal reserve owners are partially owned by larger oil and gas companies: Continental Oil, Exxon, El Paso Natural Gas, Standard Oil of California, Occidental Petroleum (Island Creek). The largest of these, Continental Oil, owns an estimated 13.7 billion tons of coal, theoretically enough to supply the nation's needs for 15 years to come.

Of these big oil companies, Continental Oil (Consolidation Coal) and Occidental Petroleum (Island Creek Coal) are in the list of the top 50 owners in the survey area, together owning 422,320 acres of surface and mineral rights. They control thousands more acres through leasing. Altogether in the survey area, eleven oil and gas companies own approximately 1,239,698 acres of surface and mineral rights combined, an average of over 100,000 acres each.

While controlling thousands of acres of coal reserves on the one hand, the oil companies are now leasing thousands of acres of oil and gas rights on the other. According to the New York Times New Service, as much as 10 million acres have already been leased in what is called the Eastern Overthrust Belt, a geologic formation running 1,000 miles along the Appalachian mountains from Alabama to New England.[19] Exactly who is leasing how much of this oil and gas is difficult to determine, as the rights rarely appear on the tax rolls. When the leases are recorded in county deed books, they often appear in the names of individuals serving as land agents for the oil companies. However, from other evidence, it is clear that the leasing activity extends well beyond the coalfields. Speculating about the presence of oil atop "Old Smokey," South Magazine reports a "land war going on for drilling rights in the Appalachian region.... Gulf, Exxon, Weaver Oil and Gas Corporations of Houston are all known to be crawling the foothills in search of landowners."[20] Already, for instance, Standard Oil of Indiana has leased 122,000 acres in just four western North Carolina counties.[21]

The oil and gas company presence is seen, too, in the development of new synthetic fuels plants in the region. In Wayne and Lincoln counties, West Virginia, for instance, Columbia Gas has been exploring possibilities of synthetic fuel development on its over 300,000 acres of minerals. In Catlettsburg, Kentucky, Ashland Oil has spearheaded a consortium (which includes Mobil Oil, Standard Oil of Indiana, and Conoco) that has built a pilot liquefaction plant, funded primarily by Department of Energy funds. In Monongalia County, West Virginia, Gulf Oil is building another liquefaction plant which would use 6,000 tons of coal a day. The Koppers Company, already the largest developer of synfuels technology in the world, plans five plants on its Tennessee properties. The synthetic fuel industry is likely to have major impacts on land use, as well as air and water quality, employment and services in the communities where it is located.

The scramble extends to oil shale, which also can be used to produce oil and natural gas. Until recently, oil shale development has only been considered a possibility for the western states, though even there has faced major environmental opposition. Now, the Department of Energy has established an Eastern Gas Shale Project in Morgantown, West Virginia to determine the location of Appalachian deposits. Meanwhile, the leasing has already begun. In 1979, Addington Oil Company had leased 150,000 acres of oil shale in the Knobs Belt that lies just west of the coalfield counties of eastern Kentucky that this survey examined. The company is owned by Larry Addington, one of two brothers who had been involved in strip-mining in northeastern Kentucky prior to selling out to Ashland Oil Company for a reported $13 million. Controversy over the terms of the leases led to an unprecedented order by the Kentucky Consumer Protection Division to allow landowners to cancel or renegotiate the agreements.[22]

Timber Companies

While oil and gas companies may be scrambling for the mineral rights underground, there is also renewed interest by the timber companies in the southeastern and Appalachian forest resources above ground. Evidence of this shift to the south is seen in the move of the headquarters of Georgia-Pacific, one of the lar landholders in the survey, from Portland, Oregon to Atlanta, Georgia. According to industry reports, other companies like Weyerhauser, Boise, Cascade, Crown Zellerbach and International Paper, are also expanding their holdings in the southeast.

The timber companies already own substantial acreage in the region. In the 80 counties surveyed, seven companies--J. M. Huber, Bowaters, Georgia Pacific, Gulf States, Weyerhauser, Champion International and Mead--own 898,158 acres of surface lands and 151,562 acres of mineral rights, much of it located in southern Tennessee and northern Alabama. While using the land primarily for logging and timber growth, they may lease the minerals for mining.

Much of this corporately-owned timber land was obtained at the turn of the century, when railroads opened the vast Appalachian hardwoods to commercial exploitation. Another wave of timber company buying occurred during the Depression. Often, as the Alabama study shows, the timber interests were able to get the land "for taxes" in court ordered sales. When these lands were timbered out, the companies moved to the northwest for much of their production. In many counties like Shelby County, Alabama, though, timber company ownership has continued to dominate the development of the local economy much the same as the coal company ownership or oil and gas company ownership to the north.

The new wave of timber industry expansion into Appalachia and the South is brought on by a number of factors, including closer access to Atlantic ports and cheaper labor. Land ownership patterns, however, are an important ingredient. According to the Southern Forest Institute, in the northwest, where much of the timber is in government ownership, the RARE II study (Roadless Area Review Evaluation) and other environmental controversies are inhibiting timber production. In Appalachia, even given the large holdings by the Forest Service and the timber industry, other private owners still own a large majority of the forest lands potentially available for commercial cutting. If present trends continue, the timber companies will likely be seeking greater control, through leasing or buying, of these timber resources.

Steel and Other Metal Companies

Traditionally in Central Appalachia, steel companies have joined the coal companies in the ownership of coal lands. Upon their properties, they have developed their own "captive" mines to gain the coal needed for steel processing. Often coal camps or coal communities like Jenkins, Kentucky, or Gary, West Virginia, were developed and owned by the steel companies. Five steel companies--U. S. Steel, Bethlehem, Lykes Resources, National Steel and Republic Steel--own 342,000 acres in the 80 county survey area.

While the steel industry does not appear to be expanding its holdings, other metals companies have been investing in the region's land and minerals, particularly since the advent of the energy crisis. The largest of these is Koppers Company, which is,as mentioned, a diversified metals and chemicals company with extensive holdings in Tennessee. Also in Tennessee, Consolidated Goldfields, a subsidiary of London, England-based Goldfield Mining Corporation, a company which has major investments in South African gold mining, has recently obtained 26,706 acres.

Though the main concentration of holdings by steel and metal companies is in the coal fields, there are corporate holdings of other minerals. Reynolds Metals, for instance, owns 58,000 acres in Mitchell County, North Carolina where mica and feldspar are prevalent. More recently in the Grandfather Mountain and Spruce Pine areas of western North Carolina, a number of companies have been prospecting for uranium. According to DOE the two areas have the potential of producing at least 14,000 tons of uranium annually.[23]

Railroads

According to the President's Coal Commission, railroads are second only to the oil and gas companies in ownership of coal reserves--owning 17.4% of known reserves. Many of these are in the West, where lands were given to them a century ago to encourage the building of railroads. The railroads also are large owners in Appalachia, where they often joined other corporations in the development of coal properties before the turn of the century on which they themselves mined the coal needed to fire their steam locomotives.

Today the railroads in Appalachia primarily lease the coal to other energy companies benefitting both from the royalties gained in mining and from rates charge for hauling the resource. An example may be found in the Norfolk and Western Railroad (N&W) which through its subsidiary Pocahontas Land, owns over 280,000 acres in the counties sampled in West Virginia, Kentucky and Virginia. In Martin County, Kentucky, "Poky" (as Pocahontas is called) owns almost 50,000 acres of surface rights and 81,000 acres of minerals--together equal to 89% of the surface acres in the county. The minerals are leased to subsidiaries of MAPCO Oil Company, who have recently announced plans for exporting Martin County coal, likely using N&W's rail-to-port facilities to do so. Perhaps because of the anticipated rise in the export market, N&W is reportedly obtaining new properties, such as the Kentenia Corporation in Harlan County. When the holdings of Chessie Systems (a combination of Chesapeake and Ohio Railway Corporation and Baltimore & Ohio Railway Company who operate the Western Pocahontas Corporation), Southern and Louisville and Nashville Railroads are added, four railroads in the top fifty holders own 581,518 acres of combined surface and mineral lands in the survey area.[24]

Miscellaneous

The miscellaneous category of corporations in the list of top 50 owners illustrate a diverse array of the other corporate interests with holdings in the region. They include: a chemicals corporation (Union Carbide); a utility (the Southern Company); general real estate and property developers (like Crescent Land and Eastern Property Trading); and financial institution (like the Boston Shamuts National Bank).

Corporate Ownership: The Changing Trends

As has been seen earlier, the highest levels of corporate ownership in this study were found in the counties with the highest level of coal reserves. In these coal counties, 50% of the land in the sample was corporately held, compared to 31% in the agricultural counties and 23% in the tourist counties. Many of these major coal counties are located in Central Appalachia, where the corporate owners have been relatively unchanging for decades. Through this study, however, two trends have been identified which are likely to bring major changes in the corporate land ownership patterns in the region.

The first trend is this: with growing competition for domestic exploitation of energy and natural resources, corporate ownership and control of land and minerals is rapidly spreading from the heartland of central Appalachia to other parts of the region. The study is replete with examples of such corporate expansion: in the West Virginia Highlands in counties like Braxton and Randolph,*Exxon and other companies have leased or obtained thousands of new acres for coal developments; in southern Virginia and western North Carolina, as has been reported, numerous companies are scrambling for control of oil and gas rights or other minerals, like uranium; on the southern Tennessee plateau, AMAX has attempted to develop the largest strip mine in Appalachia--thus far halted by citizen and state opposition. In northern Alabama, traditionally a prime agricultural valley, coal resources have been discovered, resulting in land speculation along Sand Mountain, in Dekalb County, or in the more developed areas of Marshall County. Further to the west and south, in Alabama and Mississippi, three oil companies have obtained control of millions of acres of lignite rights; while back into the Knobs of central Kentucky, several hundred thousand more acres of mineral rights have been leased by another oil company for possible oil shale development.

Many of these areas on the "periphery" of central Appalachia have been characterized in the past by individual ownership of land, or possibly by government ownership. The new corporate intrusion carries with it new conflicts, growing out of a struggle over how the land is to be used and to whose benefit. As shall be illustrated throughout this report, the decisions to be made by these counties are important ones, for the outcome of the struggles over the ownership and use of the land and minerals in these areas will partially determine the area's future course of development.

In many ways, the changes now occurring along the edge of central Appalachia are similar to those undergone in the heartland of the region at the turn of the century, when ownership of land and minerals there passed into the hands of the corporations. Now, in these central Appalachian counties, another important transition is occurring, with potentially significant impacts in the future. As has been seen in the discussion of the corporate owners of Appalachia, many of the traditional land and mineral holders are being obtained by larger corporate units, chiefly the oil, gas and energy companies. The new corporate owners bring to the region an equally new scale of capital investment, technology and corporate power. With the concentration of corporate control, single corporate decisions will by themselves be able to alter the course of an area's development more than ever before. Already such impacts can be seen in West Virginia, where Occidental Petroleum's (Island Creek's) plans for a 60,000 acre mountain top removal strip mine will obliterate one community and physically alter parts of Mingo and Logan counties. The far reaching corporate power can also be witnessed in northeast Tennessee, where a decision by Koppers to build five synthetic fuel plants on the 200,000 acres it has quietly obtained in the area over the last decade, will alter the employment, environment, and land use of the area for years to come.

With the new corporate control comes another factor, important to the response of citizens or local governments. In the past, corporate decisions regarding the development of land and mineral properties have involved a relatively simple calculus of profitability, government regulations, labor supply and community relations. Now, more global factors will be brought into play, with corporate decisions taking into consideration matters ranging from the state of Middle Eastern politics to the relative profitability of multiple corporate operations in various countries. As a consequence, the new corporate ownership brings to Appalachia greater powerlessness of citizens or local governments to influence corporate decisions, and carries with it a greater dependency of the region's people upon the power of the multinationals like Koppers, Exxon, Gulf, Continental Oil, Occidental Petroleum, St. Joe's Minerals, Standard Oil, Royal Dutch Shell, and others.

Government and Private Non-Profit Ownership

> Well, I tell you. I don't know if it has been very much good or not. Just to be plain with you. The farmer can't haul anything over it. It's a tourist road, and the farmers aren't allowed to go on there with a load and a funeral procession can't go on the Parkway. So, what benefit is it to the labor, commonplace people.... The Parkway has brought a lot of tourists and maybe some money....I haven't seen none of it but I guess it has. I don't use the Parkway though. It's only for sightseers and tourists. It has added to their pleasures but as far as helping the labor class of people, it ain't worth it.[25]
>
> --A western North Carolina resident

Despite the extent of corporate control in the region, the United States government is the single largest owner of land in Appalachia. States also own large amounts of land, in parks and wildlife areas, as do private non-profit institutions such as churches, universities, or the Boy Scouts. How extensive is this government and non-profit ownership? Where is it the most prevalent?

Of the land surveyed, some 2,137,868 acres were owned by government or non-profit groups with holdings of 20 acres or more. Of these over 2 million acres, some 97% are owned by only 10 government agencies (listed in Table II-15), making the private non-profit sector almost negligible.[26] Of these agencies, the U. S.

Forest Service is the largest single owner of land in the Appalachian Region, owning 1.2 million acres in the survey area. The U. S. Department of Interior owns land principally for national parks, of which the Smoky Mountain National Park is the largest. The Tennessee Valley Authority land lies primarily along the rivers and the agency's dams in the valley; while the U. S. Department of Energy land surrounds the top-secret nuclear processing plants in Oak Ridge, Tennessee.

Table II-15: Government Ownership of Land in 80 Appalachian Counties

1.	U. S. Forest Service (U. S. Dept. of Agriculture)	1,195,113	Alabama, Kentucky, North Carolina, Virginia, West Virginia
2.	National Park Service (U.S. Department of Interior)	317,111	North Carolina, Kentucky, Virginia
3.	Tennessee Valley Authority	175,556	Alabama, Tennessee, North Carolina
4.	State of Tennessee	173,594	Tennessee
5.	Army Corps of Engineers	55,565	Kentucky, Virginia
6.	State of Kentucky	53,661	Kentucky
7.	U. S. Department of Energy	45,975	Tennessee
8.	Cherokee Indian Reservation	29,405	North Carolina
9.	State of Virginia	29,030	Virginia
10.	State of West Virginia	8,486	West Virginia
		2,083,496	

Like corporate ownership, the extensiveness of public ownership varies greatly amongst states, particular counties and types of counties. Government and private non-profit ownership is particularly high in the western North Carolina mountains. Of the land sampled in 12 counties there, 40.5%--representing 20.3% of the total land--is in this category of ownership, most of it held by the U. S. Forest Service. Western North Carolina also tends more than any other state to attract private, non-profit holdings such as religious groups who use the land for church camps, retreats, and recreation purposes. Though not in the survey area, the case of Buncombe County in North Carolina is instructive. According to the tax assessor, there are over 8,000 parcels of tax-exempt land held by owners who claim a religious purpose.[27] Table II-16 lists the counties with the largest amount of land in government or private, non-profit hands. Of these, Swain County, N.C. demonstrates the pattern most dramatically. There, 81.5% of the county is owned by government agencies, including the National Parks and Forest Service, and land held in trust for the Cherokee Indian Reservation.

Table II-16: Counties with Major Government and Private Non-Profit Ownership
(Top Ten in Rank Order)

Name of County	Percent of County	Percent of Sample	Total Acres
1. Swain, NC	81.5%	86.1%	273,201
2. Clay, NC	47.9%	73.1%	64,059
3. Randolph, W. Va.	30.0%	39.3%	180,000
4. Smyth, VA	30.0%	45.5%	83,564
5. Bland, VA	29.6%	41.5%	70,000
6. Summers, W. Va.	28.3%	52.2%	63,380
7. Cleburn, Ala.	22.6%	31.3%	82,917
8. Winston, Ala.	22.5%	37.1%	88,577
9. Marshall, Ala.	22.5%	52.3	82,259
10. Wythe, VA	19.9%	34.2	58,678

The extent of public ownership is strongly associated with certain types of counties, and negatively associated with others. One might expect, for instance, that a high degree of government ownership, especially by such agencies as the Park Service and Forest Service, would be associated with a high degree of tourism and recreation. These government lands attract those interested in hiking, fishing, hunting and natural beauty. In turn, commercial recreation and tourist industries spring up to cater to the outside visitors, and may come to dominate the service sector of the county. The data show this association to be the case. For counties where there is a high degree of the economy based on tourism, 29% of the sample is publicly held. This is double the rate of government ownership in high agriculture counties, and triple the rate in the major coal counties.[28]

As in the case of corporate ownership, government ownership is expanding. The TVA and the Army Corps of Engineers seek more rivers to dam, and land to flood. The U. S. Forest Service continually buys land in counties where it already has large holdings, or where it plans to develop areas like the Mount Rogers Recreation Area, to attract more tourists. The expansion of government ownership has been a volatile issue, especially amongst local landowners, who like the lady in the quote above, question who is to benefit. The impacts of government ownership will be examined more fully in later chapters.

Government Ownership of Mineral Rights

Ownership by government and private non-profit owners also applies to mineral rights, though in many cases, the extent of mineral ownership is difficult to determine. Of all of the public/non-profit acres in the sample, for instance, only 39,243 acres of mineral rights were listed, held by 39 owners. Yet, other data show that the government and private non-profit ownership of mineral rights is far more extensive than this, particularly under the U. S. National Forests.

In the West, federal leasing policy of government-owned minerals has been a major issue. Local communities, environmentalists and others have been concerned that not enough attention is being paid in Federal decision-making to social and environmental impacts of mining activities.

In Appalachia, where government ownership is not as extensive as in the West, concern over federal leasing has not been as widespread, though it has been an issue in some communities. Often, companies are allowed to deep mine coal under Forest Service land as long as entryways are driven from land owned by adjacent private owners, and as long as the federal forest is not disturbed. With a new wave of leasing in the region, pressure to exploit more of these government owned minerals is likely to increase. The President's 1981 budget contains substantial funding increases for the U. S. Forest Service, primarily to expedite energy resource development on National Forest lands. Already, in southwest Virginia, over 120,000 acres of federal forest land are under consideration for oil and gas leasing, and in western North Carolina, 122,000 acres, much of it also under Forest Service land, has already been obtained by Amoco.

Controversy over mining in the U. S. Forests is also likely to rise in cases where private owners lay claim to minerals under the government lands. In several well-publicized instances, conflict has emerged as to which interest should take precedent--private owners' desire to exploit their mineral claims, or the public's claim to protection of the environment. In McCreary County, Kentucky, for instance, the Greenwood Mining Company, owned by Stearns Coal and Lumber, has fought to strip mine coal it owns under the Daniel Boone Forest. More recently, in Scott County, Virginia, controversy has emerged over a Forest Service decision to allow a private owner claiming mineral rights under part of Devil's Fork to prospect for uranium.

The issue of private mining on public lands does not only affect federal holdings. In Tennessee, representatives of a number of state agencies have been meeting regularly to set up guidelines for the leasing of minerals under state owned lands. Environmental groups are worried that such a move will open the door for strip mining of the coal reserves which lie under the 173,000 acres owned by the State of Tennessee along the Cumberland Plateau. In addition to government owners, several private non-profit owners of mineral rights were discovered in the survey. The largest of these is Harvard University, which owns 11,182 acres of oil and gas rights in Johnson and Martin Counties, in eastern Kentucky, which were left to the university by a wealthy northeastern family.

Individual Ownership

> "The land companies won't let private citizens have the land at any price: a poor person can't deal with them."
>
> --a retired coal miner

The ownership of land by corporations and government leaves little for the local Appalachian. Under one-half of the land in our sample is owned by individuals, and under one-half of that is owned by local individuals.

At first reading the data might suggest otherwise: over 30,000 individuals in the sample own 5,925,470 acres, or 45% of the land sampled. This apparently widespread individual ownership of land, however, is deceptive. The "individual" category, it should be remembered, represents holdings of two types: the local landholders of 250 acres or more, and the out-of-county owners of 20 acres or more. The vast majority of these individual owners--about 25,000 of them--are in the absentee category, owning 56% of the individual land in the sample. Some 90% of these absentee holders fall in the category of relatively small absentee owners, owning between 20 and 250 acres. This category (which was not collected for the local owners) accounts for 1,682,088 acres or 28% of the individual land surveyed.

A closer look at the data, then, does not necessarily support the stereotypical image of extensive individual local land holdings in the region. Only 5,079 of the 30,175 individual owners live in the counties where their holdings are located. Their holdings (above 250 acres each), total just 10% of the total acreage in the 80 counties. In North Carolina, only 3.4% of the land in the 12 counties studied is owned by these local individuals; in Alabama, the figure rises to 13.1%. In none of the counties do local individuals with over 250 acres account for over 30% of the county surface.

Table II-17: Counties with High Percent of Local, Individual Holdings

County	Total Individual Acres	Percent of Sample	Percent of County Surface
Jackson, Ala.	192,928	41.1	27.9
Tazewell, VA	85,040	41.5	25.4
Mineral, W. Va.	51,166	47.6	24.2
Fayette, Ala.	89,112	40.6	22.2
Scott, TN	66,802	25.7	19.2
Fentress, TN	60,464	25.6	19.0
Jefferson, W. Va.	25,569	52.4	18.9
Bland, VA	44,335	26.3	18.8
Cumberland, TN	78,123	27.9	18.0
Lamar, Ala.	67,333	31.2	17.4
Cherokee, Ala.	61,830	26.5	17.4

Just as coal lands have been associated with corporate ownership, and public lands with recreation and tourism, so we might expect this individual category to be associated with agricultural counties. On the whole, as the later chapter on agriculture shows, farming in Appalachia has not been taken over by agribusiness, as it has in some parts of the country. Also, it is where mining and federal ownership are not occurring that agriculture is still strong.

Generally, the expectations can be upheld. In the high agricultural counties, 53% of the land sampled is owned by individuals. This is substantially higher than in the high coal counties, where only 40% of the sample is individually held and slightly higher than in the high tourism counties, where 48% is individually owned. Similarly the degree of individual ownership in the high agricultural counties is much greater than the low agricultural counties: 53% compared to 38%. Perhaps more appropriate is to see what percent of land in agricultural counties is held by local individuals, as the local owners are the most likely actually to be farming the land. This also shows the same pattern: in agricultural counties, 25% of the sample is controlled by local individuals, in tourism counties 20%, and in coal counties only 18%.

In sum, then, the romantic image of owners living upon and working their medium sized family holdings in Appalachia is not entirely accurate. Local individual ownership, where it does still occur, is associated with agricultural production. But these landowners of the region are under pressure: Corporate ownership, often for energy and resource exploitation,and government ownership, with associated tourism and recreation developments, threaten the access people in the region have to the land and the control they exercise over its use. While only 1% of the local population joins corporate, government and absentee holders to own over half the land, the other 99% of the population are very much affected by existing and changing ownership patterns. The nature of these effects of land ownership upon rural Appalachian communities in areas of land use, property taxation and services, economic development, housing and environment will be considered in the remainder of this report.

Chapter II

FOOTNOTES

1. Robert C. Fellmeth, Politics of Land (New York, Grossman Publishers,) 1973), p. 14.

2. The index used here was chosen for this study because of its relative simplicity. The Gini coefficient, another concentration measure, was also computed. The correlation between the Gini index and the index used here is quite high: Pearson's R =.735 at the .0001 level of probability.

3. This relationship, e.g. the larger the holding, the more likely the owner will be absentee, is statistically significant: Chi square = 445 at the .0001 level of probability.

4. Statistically, the correlation between the percent of a county owned by corporations and the percent owned by absentee holders is significant. Pearson's R = .593 at the .0001 level. In the 37 high coal counties in the survey, the correlation between corporate and absentee ownership rises even further, to .768 at the .0001 level. For mineral rights, the strength of the relationship increases to .967 at the .0001 level.

5. Statistically, there is a significant relationship between the level of corporate ownership of land and the amount of coal reserves in the ground, such that the greater the reserves the greater the percent of the county corporately owned. (Pearson's R = .368 at the .0015 level of probability.) A stronger correlation is found with coal production, such that the greater the corporate ownership of land the greater the coal production. (Pearson's R = .463 at the .0001 level of probability).

6. The Index of Resource Control was developed for this study to deal with the pattern of separated land and mineral ownership. It is admittedly crude, and is affected by the degree of adequate reporting of mineral ownership in the various counties.

7. Analysis of the top 50 owners in the 80 counties does not, of course, give the complete ownership of these corporations in Appalachia--Continental Oil, for instance, owns vast tracts of land not included in the survey area. Similarly, other companies of a given type may happen to own tracts of land in the sample area, which are smaller than those included in this listing. Nevertheless, a look at the top 50 owners in the 80 counties provides a cross sample of the types of corporate owners in the region, while not providing the full extent of their holdings.

8. Dun's Review of Modern Business, April 1965, p. 40.

9. Quoted in Charleston Gazette, January 9, 1980.

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Footnotes
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10. Tennessee State Report, p. 37.

11. Ibid, and also newspaper accounts including Nashville Tennessean, December 24, 1974, January 5, 1975, April 27, 1977; Courier Journal. June 30, 1977.

12. Kentucky State Report, pp. 2-3.

13. Harlan County Case Study, p. 8.

14. Campbell County Case Study, p. 6.

15. Middlesboro Daily News, August 1978.

16. Wise County Case Study, p. 15.

17. Tennessee State Report, p. 4, and Courier Journal, November 8, 1980.

18. Knoxville News Sentinel, November 26, 1978.

19. Printed in Louisville Courier Journal, March 25, 1980.

20. The South Magazine, June 1980, p. 14.

21. Charlotte Observer, January 21, 1980.

22. Courier Journal,April 29, 1980.

23. Quoted in Southern Exposure, Winter 1979, p. 29.

24. Chessie Systems' holdings in Appalachia are larger outside the survey area. According to the Miller study for the Huntington Herald Dispatch in 1974, Chessie owns 517,636 acres in West Virginia alone. (Miller, op.cit.)

25. Mrs. John Sutphin, in an interview with Brenda Bowers, seasonal naturalist, Blue Ridge Parkway, 8-27-74, pp. N16-17, Oral History Transcriptions for Mabry Mill, 1957-1977, in file box labelled "Original Oral History Transcripts at Appalachian Resources Center, Oteen Maintenance Area, Blue Ridge Parkway, Oteen, N.C.

26. Government and private non-profit owners were originally coded separately. However, due to the almost insignificant acreage in the private non-profit category, the two were combined for presentation.

27. John Gaventa, "Property for Prophets," Southern Exposure, Volume IV # 3, p. 102.

28. Statistically, there is a significant correlation between the percent of a county owned by government and private non-profit groups and the level of tourism in the county (measured by percent of services going to tourism and recreation): Pearson's R = .609 at the .0001 level of probability. On the other hand, there is a slightly negative relationship between this category of ownership and the level of coal reserves in a county, such that the greater the coal reserves, the less the extent of public land. (Pearson's R = .293 at the .02 level).

Chapter III. PROPERTY TAX PATTERNS IN RURAL APPALACHIA

Introduction

One of the major policy areas related to the ownership and use of land is its taxation. Historically and today, the taxation of property is the primary source of locally generated revenues for county governments, providing funding for public services such as education, roads, welfare, health, sewage. In general across the country, the proportion of the tax which actually falls on the land is small, probably less than 20% according to some reports.[1] Buildings and other forms of real property provide the bulk of the tax base. However, in rural areas, where improvements have not been made upon the land to the same degree as in cities, taxation of the land itself is a principal revenue source. In this survey, 50% of the property taxes recorded were derived from the land surface; taxes on mineral rights beneath the land accounted for 26% of the property taxes, and taxes on improvements only 24%.

Across the nation, of course, rising property taxes have provoked citizens' outcry, while at the same time lack of funds has thrown local governments into fiscal crisis. In the last twenty years, according to the 1977 Census of Governments, property values for tax purposes have increased 339%. From 1971 to 1976 they increased 71%. County taxes (about 81% generated from property taxes) rose 59% in the same period. Despite the rising local taxes, the proportion of county budgets supported by the property tax declined from 41% in 1966, to 36% in 1971, to 31% in 1976. "As property taxes exhibit the conflicting trends of decreasing proportion and increasing amount,"[2] local governments must either turn to federal and state sources for additional support or cut existing services.

If anywhere, one might not expect the fiscal crisis of local governments to be as great in Appalachia as in other parts of the country. Appalachia's mineral wealth alone offers the prospect of significant income for local governments. The owners of the wealth, as has been seen, are often large and profitable corporations, or absentee owners holding the resources for speculative value, offering the possibility of increasing taxation without overburdening already pinched small homeowners. A relatively sparse rural population may avoid some of the costly demands of urban areas.

Despite the wealth of Appalachia, however, the region's local governments remain poor. Funds are lacking for even minimal services found in other parts of the country. The reason for the disparity, as shall be seen in this chapter, lies in the failure of the tax system to tax adequately and equitably the region's property wealth. To explore the problem, the chapter shall examine taxes on surface lands, taxes on mineral rights, and the problem of tax-exempt holdings. Then it shall assess the impact of these patterns on distribution of the tax burden and on adequate delivery of public services.

Property Taxation of Surface Lands

Table I provides a short summary of the laws pertaining to property taxation in each of the survey states. According to the law in each state, land is to be appraised at fair and actual value. In Alabama and Tennessee percentage rates are set to establish what proportion of the value of various classes of property can actually be taxed. In theory the assessment rate is to lower the burden carried by the residential and agricultural owners, while raising the burden for utilities and for commercial property. In actuality, of course, the "true and actual" value of surface lands as recorded on the tax books is low. In Tennessee, Kentucky, and Virginia, the average value of an acre of land in the sample was under $100, while the going price of a piece of rural land can easily be 10-20 times as high.

Table I. Legal Basis for Assessed Value of Realty, by State: 1976 and Subsequent Periods

State	Basis
Alabama	Fair and reasonable market value. Effective in 1972, the following percentages thereof apply for the types of realty indicated. Class 1, utilities used in business--30 percent (except in eight counties, where the level is 35 percent). Class 2, property not otherwise classified--25 percent. Class 3, agricultural, forest, and residential--15 percent.
Kentucky	Fair cash value.
North Carolina	True value in money.
Tennessee	Effective January 1, 1973: Percentages of actual value, as follows: Public utilities................55 percent Industrial and commercial.......40 percent Farm and residential............25 percent
Virginia	Fair market value.

Table I. (Continued)

West Virginia	True and actual value, but four classes of property, each subject to a specified rate limit as follows, amounts per $100 of assessed value: I--personalty--50 cents II--owner -occupied residential property, including farms--$1.00. III--all property outside municipalities, other than I and II--$1.50 IV--all property inside municipalities, other than I and II--$2.00

Source: 1977 Census of Governments

To deal with the problem of undervalued property appraisals, many counties in the region recently have undergone reappraisal by independent outside appraisal firms. Still, however, glaring examples are found of the failure of assessments to keep up with increasing values. One illustration is Martin County, Kentucky where the Martiki Coal Company, a subsidiary of Mapco Oil Company, bought 154.25 acres in five different transactions during 1978-79. The total bill: $425,500 or $2,579 per acre. However, Martiki's entire 5,856 acres in the county are only appraised for tax purposes at $50/acre--less than 1/50th of the value of the recent transactions.

Valuation, by itself, though is a crude means of comparing property tax structures across state and county lines. One county may have a practice of setting low values and compensating through high tax rates; other counties may assess at a value closer to actual value, while setting the tax rate at a lower level. For this reason, the more accurate way to analyze taxes in a multi-state and multi-county study is to look at the "bottom line": the actual taxes paid per acre of land. In so doing, some clear patterns emerge about surface taxation of rural land in the eighty counties studied.

In general, the taxes paid on rural lands are relatively low. Almost a quarter of the owners in the study pay less than 25¢ per acre for their land; only a little more than one-third pay over $1.00 per acre. Overall, the amount of taxes paid per acre is only 90¢ per acre for the taxable land in the study. In Alabama, the average tax per acre is only 49¢ (before the recent reassessment). In North Carolina it rises to $2.07. In other states the average per surface acre is as follows: Kentucky, 79¢; Tennessee, 79¢; Virginia, 84¢; and West Virginia, $1.28 (see Table II).

Table III-2

Property Taxes Paid Per Surface Acre of Land by State, Type and Residence of Owner

A. All Taxable Surface (Individual + Corporate

	In-County	Out-of-County In-State	Out-of State	ALL
Alabama	.64	.42	.39	.49
Kentucky	.69	.72	.86	.79
North Carolina	2.10	2.38	1.82	2.07
Tennessee	.96	.81	.66	.79
Virginia	1.04	.85	.66	.84
West Virginia	.84	1.61	1.51	1.28
Total Sample	.87	.92	.90	.90

B. Individuals

	In-County	Out-of-County In-State	Out-of State	ALL
Alabama	.46	.42	.35	.43
Kentucky	.63	.78	.59	.66
North Carolina	1.53	2.01	1.81	1.84
Tennessee	.96	.87	.79	.89
Virginia	1.02	.86	.85	.94
West Virginia	.51	.72	.71	.56
All Individuals	.72	.82	.84	.78

C. Corporations

	In-County	Out-of-County In-State	Out-of State	ALL
Alabama	1.40	.43	.42	.59
Kentucky	1.10	.59	.97	.92
North Carolina	3.26	3.18	1.82	2.61
Tennessee	.96	.67	.62	.68
Virginia	1.12	.83	.53	.67
West Virginia	1.30	1.88	1.60	1.59
All Corporations	1.37	1.06	.94	1.03

Source: Appalachian Land Ownership Study, 1980.

Overall, corporations pay more per acre than do individuals, $1.03 per acre compared to 78¢. However, there is not a consistent pattern. In Virginia, for instance, corporations pay only 67¢ per acre, while individuals pay 94¢; and in Tennessee, corporations pay 68¢ per acre, while individuals pay 89¢ per acre.

When residence of the owners is considered, one finds that in four of six states, out-of-state owners pay less per acre than do local owners of land in the sample. In Alabama, local owners pay 64¢ per acre, while out-of-state owners pay only about 60% of that--39¢ per acre. In Virginia, there also is found a large discrepancy: local owners pay $1.04 per acre, while out-of-state owners pay only 66¢. Similar patterns are found in North Carolina and Tennessee. Only in Kentucky and West Virginia do the absentee owners pay more per acre than do the local owners(and in West Virginia it may be due to the fact that coal appraisals in that state are sometimes reflected in the surface values).

When residence is considered, one also gets a different perspective on the taxes corporations pay: on the whole, out-of-state corporations--many of whom are holding the land for its speculative and mineral value--pay far less per acre than do local corporations, many of whom may be using the land for industry; or than local individuals, many of whom are using the land for housing. In Alabama, for instance, out-of-state corporations pay only 42¢ per acre--less than one-third that paid by local corporations, and slightly less than the rate paid by local individuals. In Virginia, absentee corporations pay 53¢ per acre for their land, while local individuals and local corporations pay about twice that, or $1.02 and $1.12 respectively.

Not only do absentee owners pay less than local owners (with out-of-state corporations often paying least of all), but another related pattern is also found: larger owners tend to pay less per acre than do the smaller owners. As Table 3 shows, 34% of the owners with over 1,000 acres each pay under 25¢ per acre in taxes, while only 23% pay more than $1.00 per acre. For the smaller owners with under 250 acres each the reverse pattern is true: only 20% pay under 25¢ per acre, while 36% pay more than $1.00 per acre. This pattern--the bigger the owner the less the taxes--holds particularly true for the Tennessee counties in the survey. There, of owners with more than 1,000 acres, 23% pay over $1.00 per acre, as in the overall sample, but of the small owners with 250 acres or less, 52% pay more than $1.00 per acre of surface owned.

TABLE III-3

Surface Taxes Paid Per Acre by Size of Surface Owner

*Number of Owners **Row Percent ***Column Percent	250 Acres or Less	251-500 Acres	501-1,000 Acres	Over 1,000 Acres	TOTAL
Under 25¢/acre	5,052 * (65.2%)** (20.4%)***	1,592 (20.5%) (30.6%)	637 (8.2%) (34.2%)	466 (6.0%) (34.4%)	7,747 (23.4%)
26-50¢/Acre	5,061 (78.4%) (20.4%)	890 (13.8%) (17.1%)	297 (4.6%) (15.9%)	203 (4.6%) (15.0%)	6,451 (19.4%)
51¢-$1.00/Acre	5,635 (73.1%) (22.8%)	1,232 (16.1%) (23.7%)	474 (6.1%) (25.5%)	366 (4.7%) (27.1%)	7,707 (23.2%)
More than $1.00/Acre	9,013 (80.1%) (36.4%)	1,480 (13.1%) (28.5%)	545 (4.0%) (24.4%)	314 (2.8%) (23.4%)	11,263 (34.0%)
TOTAL	24,761 (74.6%)	5,194 (15.7%)	1,862 (5.6%)	1,351 (4.1%)	33,168 (100.0%

Chi Square = 628 Probability = .0001

Source: Appalachian Land Ownership Study, 1980

Why the discrepancy? Why do the absentee, and the large owners tend to pay less per acre of surface land than the more local smaller owners? There are a multitude of reasons, of course, but part of the answer lies in the use to which the land is put.

The primary means by which rural assessors determine value is through recent sales on the market. Value is fixed according to what willing buyers would pay willing sellers in arms length transactions. However, this presents a problem in assessing the value of the vast tracts of land held primarily by absentee corporations in many parts of Appalachia: large tracts of land may be traded rarely. Interviews in the case studies show time and again that the large owners have held the land for decades, and do not want to sell. The assessments on the land reflect past values for rural property, when land was abundant and relatively cheap, not the values of today--where land is becoming increasingly in demand and more valuable. At least some assessors have ruled that only one or two transfers do not determine a pattern, and have refused to consider certain recent sales in making their assessments, despite the fact that alone one transfer of these vast tracts of land can affect large portions of a county. While the market yardstick is used to value land, in some areas the concentrated control of land in a few unchanging hands has, in effect, taken the land out of the market, thus rendering the yardstick ineffective. As a result, not only do larger tracts go underassessed, but competition increases for the land that is being bought and sold, driving its values higher and higher.

The assessed value of the large absentee tracts remains low for another reason--on the whole these tracts are being held for speculative value, or for the value of the minerals underneath (which, as shall be seen, is also under-assessed). The owners do little to improve the value of the land--it is classed simply as woodland or mountain land, receiving a low appraised value, and taxed at an average of only 68¢/acre. On the other hand, local owners tend to improve the land with homes and other buildings, having the effect of increasing its value. As can be seen in the chart below, for individually owned land, local owners tend to build on their land, and to make more valuable improvements, thus raising their property assessments.

TABLE III-4

Rate and Value of Building Improvements on Individually Owned Land By Residence

	In-County Individuals	Out-of-County/ In-State Individuals	Out-of-State Individuals
Percent of Parcels with Buildings	92%	43%	33%
Property Taxes on Buildings(per Parcel)	$101.06	$57.50	$39.16

Even though the local land in the survey was only the plots 250 acres or or above, 92% of the locally owned plots have building improvements on them, with an average tax of $101.06. On the other hand, only 33% of the parcels owned by out-of-state individuals have buildings, taxed at a rate of only $39.16 each. The pattern adds to the already regressive nature of the property tax: local residential owners who have less land pay more for it — an average of $1.16 per acre according to the survey.

It is partly to overcome this regressive nature of the tax that various states have adopted classification systems whereby land is assessed at different percentages of its value according to its use. In Tennessee for instance, commercial and industrial land is to be assessed at 40% of its value, while residential land and agricultural land is assessed at only 25%. Alabama has a similar classification system, and in Kentucky, an agricultural use provision is meant to give special breaks to agricultural land. While the principle of classification according to use is an accepted one, its misuse in Appalachia has increased rather than eased the property tax inequities. Look at the data:

- --In Tennessee, vast tracts of land owned for mineral development by coal land companies and energy producers have been routinely assessed as "farmland", paying at a 25% rate rather than the 40% assessment rate required for industrial and commercial produces. A citizen's complaint in 1978 resulted in a state ruling that commercial rates should be applied when the land is leased for mining purposes. However, the decision may not lead to change: local assessors have been slow to implement the rule, and may lack reliable information as to which lands are actually leased for mining.

- --In Kentucky, the legislature in 1968 passed an amendment to the Kentucky Constitution, section 172A, which allowed assessments at less than full cash value for land used for agricultural or horticultural purposes. The purpose of the amendment was to lessen the impact of property taxes on the farmer. By statute, only corporations organized primarily for agricultural purposes and which derive a substantial portion of their income from farming or horticulture may benefit from these reduced taxes. In practice, however, east Kentucky assessors have applied the provision to any owners of more than 5-15 acres (depending on the county). The major beneficiaries of the practice, of course, are the energy giants and coal land holders, who practice not a bit of agriculture. Since 1968, in eastern Kentucky, these large coal and land owners have received up to 50% reduction in property taxes due to this provision.

- --In Alabama, similar current use provisions are at work. Speculatively held timber and mineral lands are given the low assessment rate designed to protect forest areas. As a result, the land is assessed at $22.70 an acre, and yields only 59¢ per acre in taxes.

The ultimate effect of this pattern can be seen in the chart below which gives the taxes per acre of surface land by its use, as defined on the taxrolls.[3]

TABLE III-5

Surface Taxes Per Acre By Land Use (Highest to Lowest)[3]

	Surface Taxes/ Acre	Number of Acres	Percent of Total Classified Land
Mineral Land Under Development	$1.97	680,344	12%
Commercial/ Industrial	1.45	1,225,651	21%
Residential	1.16	516,883	9%
Woodland/Forest	.68	2,350,458	40%
Agricultural	.68	1,051,371	18%

While mineral land under development and commercial/industrial land are taxed at a higher rate than woodland or farmland, relatively few acres--33%--are classified in that category. The largest portion--58%--of the land is in the woodland and agriculture category, despite the fact that, as we have seen in the previous chapter, the principal owners of the land are holding it for energy purposes, or for speculation, not for agriculture at all.

If the larger, absentee owners are the beneficiaries of surface taxation patterns in Appalachia, they also fight to keep it that way. During the course of this particular study, the tax issue was perhaps the most controversial in Alabama, where in 1978 the legislature passed Amendment 373, a "Tax Relief Package" which had the effect of placing a "lid" on the amount values could be increased through a court-ordered statewide reappraisal program. The Amendment was supported by a "grassroots organization" called the "Alabamians for Tax Relief Committee." Handsomely financed with a budget of $100,000, the group received much of its funding from the Farm Bureau, and from Alabama's large corporate landholders: the Gulf States Paper Company donated $3,650; Weyerhauser Company donated $1,800; International Paper gave $5,000, and Champion International gave $1,900. Though Alabama has the lowest property tax base in the country, a before and after study of the reappraisal program shows that as a result of the Tax Relief Package the large landholders still pay little for their land. In fact, by conservative estimates, Amendment 373 provided tax relief of at least one million dollars a year to the 26 largest landowners in the state (see Alabama State Report).

When looking at the taxation of surface lands in Appalachia, then, a clear pattern emerges. Large and absentee owners pay less per acre of land than the small and local owners pay. While the reasons for the pattern may be numerous, several have been discussed: the relatively unchanging monopoly of large tracts, rendering the market approach to valuation ineffective; the failure of the large and absentee owners to improve their properties; the "misuse" of the use principle; and the organized political pressure of the large and corporate owners to keep their taxes low.

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Property Taxation of Minerals

If there is any place in the country, though, where one might not expect a property tax crisis, it might be resource-rich Appalachia. Among other resources, the region contains massive reserves of coal, the "black gold" of the energy area. Oil and gas deposits also stretch under a number of its counties. With the nation more and more turning to domestic energy source, the region's resources have gained more and more value to the nation and to the world. But despite the rapidly escalating values, Appalachia's mineral wealth remains relatively--even startlingly--property tax-free. The figures gained in this study speak for themselves:

> --Over 75% of the 3,950 owners of mineral rights in the survey pay under 25¢ per mineral acre in property taxes. Some 86% pay less than $1.00 per acre In the twelve counties in eastern Kentucky--which include some of the major coal producing counties in the region--the average tax per acre of minerals is 1/5¢ ($.002). The total property tax on minerals for these major coal counties is a meager $1,500.
>
> --Altogether the 80 counties in the survey receive only $5.1 million in property taxes from their enormous mineral wealth (mostly from coal). Some 97% of this revenue comes from the 37 counties classified in this study as high coal reserve counties (i.e., counties with over 100 million tons of reserves). Twenty-two of these counties are known to have over one billion tons of coal reserves. By conservative calculations, then, the average tax per ton of known coal in the ground in these major coal counties is only $.0002 per ton--or 1/50th of a cent.

What accounts for this situation in which Appalachia's most valuable resource--its mineral wealth--is taxed so low? Unlike surface taxation, in which patterns could be found across the 6 states, the case of mineral taxation requires state by state examination (see Summary, Table VI).

ALABAMA: In Alabama the average tax per recorded mineral acre is only 4¢. Even that figure is deceptive, for it only includes minerals which have been severed from the surface ownership. Minerals owned "fee simple" with the surface are not valued at all--despite the Alabama Code which states that "real and personal property shall be estimated at its fair and reasonable market value--taking into consideration all elements or factors bearing on such value."[4] Even the severed minerals are not taxed very highly. Usually the value of mineral rights is self-declared by the owner. Most mineral acres are valued at only $10-$15/acre--far less than its market value today. Moreover, most of these mineral acres are assessed at only 10% of the fair market value--a rate specified for agricultural, residential and timber land according to calculations for this study. If the mineral rights in fifteen northern Alabama counties were appraised at just $100/acre, the taxes per acre would still be only 62¢, but over $50,000 a year of additional revenues would be generated.

TABLE III-6

AD VALOREM MINERAL TAXATION IN FIVE SOUTHERN APPALACHIAN COAL PRODUCING STATES

State	Pertinent Legislation	Implementation	Assessment Procedures Applied to Minerals	Average Tax Per Mineral Acre (For Sample Counties)	Current Mineral Property Taxes Received (For Sample Counties)	Estimated New Revenues with Minimal Coal Taxation Program*
Alabama	All real property should be assessed at its fair and reasonable market value.	No assessment of minerals where held "fee simple" with land above. "Self-assessment" of severed mineral rights	Assessment rate of 10% is applied, the rate for timber. agricultural and residential land	4¢	$70,000	$670,000
Kentucky	Appraised at fair market value; but uniform tax set by legislature on "unmined coal" at 1/10¢ per $100 valuation.	In hands of county property valuation administrator; lack of cooperation by companies; no state program.	Most coal land assessed at "agricultural and horticultural" rate--giving up to 50% tax break.	.2¢	$ 1,500	$8,102,000
Tennessee	Developed and undeveloped minerals to be valued by formula established by State Board of Equalization	Formula applied in only 3 counties; state has discontinued mapping program for counties.	Coal property assessed as "agricultural" (25%) except what is underlease to mine (40%).	15¢	$94,500	$835,500
Virginia	Mineral lands and mineral rights to be assessed separately at 100% fair market value.	1966 guidelines used for minerals under development; no guidelines for minerals not under development. No state mapping program for local assessors	Same assessment ratios as used on surface are applied	Minerals under development range from $10-$76/acre Minerals not under development range from $1-$1.75/acre	$1,421,000	$2,579,000

Source: Appalachian Land Ownership Study, 1980

TABLE III-3 (Continued)

State	Pertinent Legislation	Implementation	Assessment Procedures Applied to Minerals	Average Tax Per Mineral Acre (For Sample Counties)	Current Mineral Property Taxes Received (For Sample Counties)	Estimated New Revenues with Mineral Coal Taxation Program*
West Virginia	Mineral lands to be taxed at an equal rate to other land.	An extensive mapping and coal valuation program has been established by the state; partially implemented in 30 counties	Varies from county to county. Most assessors have taken 50% of values recommended by state.	$1.09	$3,559,000	$4,337,000

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*See calculations, pp. 84-88 .

Source: Appalachian Land Ownership Study, 1980

KENTUCKY: If property taxes on minerals are low in Alabama, they are next to nothing in Kentucky--the leading coal producer in the country. In Kentucky, a 1978 state law established a uniform rate of 1/10 of one cent per $100 value on all unmined coal. The result virtually eliminates property taxation on coal in the ground: for instance, in Martin County, Kentucky, the largest coal producing county in the state, Norfolk and Western Railroad (Pocahontas Kentucky) owns 81,333 acres, equivalent to 55% of the county's surface. The coal is valued handsomely: $7,604,963, but the actual tax generated is only $76.05.

The 1978 legislation establishing the rate of taxation on coal reserves of 1/10 of one cent per $100 value came in the wake of failure by the state to develop a mineral taxation program. In 1976, the legislature had enacted a property tax on unmined coal of 31.5¢ per $100 value, to be administered by the state. Even at this low rate, the program was marred: only four inspectors were hired to assess the state's reserves. Unused to any taxes at all, the companies refused to cooperate: the Courier Journal reported on June 1, 1977 that of 7,000 tax report forms mailed to known coal owners and mining companies, only one-third or less were returned. Of those, less than 10% contained "adequate" responses. In 1978, the state gave up the program, turning coal valuation back to the local assessors. However, the "one-tenth of a cent" flat rate set by the legislature has effectively left the local assessors unable to generate revenue from east Kentucky's vast coal property. The situation goes on, despite the fact that east Kentucky counties are heavily subsidized by state and federal funds for even minimal services, and desparately need new property tax revenues.

NORTH CAROLINA: The average tax placed on minerals is 12¢/acre. However, there are only a few instances of recorded mineral rights--only 15 owners controlling 207,330 acres were found in the survey. The low number of mineral acres compared to other states is because North Carolina has no coal reserves. With the current exploration in the western part of the state for other minerals--uranium, oil, gas--mineral taxation may become a more important policy issue.

TENNESSEE: Although Tennessee statutes state that minerals must be taxed as real property, this simply was not done until 1971, when a complaint by a group of east Tennessee citizens resulted in a decision by the State Board of Equalization to tax coal reserves. After the ruling, a procedure was adopted using the Hoskold formula to compute the present value of the coal underground based on the projected income stream it would bring to the owner. State staff (primarily one geologist) was delegated to help local county assessors to obtain coal reserve information and to map coal ownership.

However, according to data obtained in this study, nine years following the State's ruling most of the mineral resources still go relatively tax free. The lack of implementation of the state's ruling has been widespread. The state staff of one person mapped only three counties before being transferred to another task; in 11 of the 64 counties surveyed, the full market value is still set at less than $30/acre; in 7 of the counties it is below $10/acre. The average tax paid per mineral acre is still only 15¢.

Despite the lack of implementation, important precedents and procedures have been set in Tennessee for coal taxation. Primarily as a result of citizens' pressure, taxes have been raised on some plots; coal company equipment has been entered on the books; and the 40% commercial assessment rate has been applied to coal company land leased for mining, replacing the 25% farmland there previously. If the state were to continue its program of assistance to counties, more revenues clearly would be generated.

VIRGINIA: The average taxes per acre of minerals on the taxbooks in Virginia double the average rate of any other state in the survey. However, the higher rate is deceptive, for in Virginia there is a crucial distinction between minerals under development and minerals not under development. For minerals under development, i.e. being mined, the State Department of Taxation has established procedures which give taxes ranging from $10-$76 per acre, depending on the county. However, this is applied to under 1% of the mineral acres found in the survey.

No procedures have been established by the state for mineral reserves, i.e. minerals not under development. Using their own rule of thumb procedures, assessors have established mineral taxes ranging from $1.09 - $1.95 per acre on undeveloped minerals in the southwest Virginia coal producing counties. While what is on the books may be higher per acre than other states in the survey, there are hundreds of thousands more mineral acres not recorded at all, and no mapping program has been established by the state to help local assessors determine where these mineral reserves are. The result of the failure to assess mineral reserves adequately is an enormous loss of revenue for southwest Virginia counties. Conservative estimates using formulas described below suggest that the major coal producing counties would realize $2.4 million additional tax dollars annually were coal reserves properly taxed.[5]

WEST VIRGINIA: The only state in the survey area in which the problem of undertaxation of mineral reserves has received concerted attention by state government is West Virginia. There, the State Tax Department has adopted the following position:

> Nature has endowed West Virginia with abundant mineral resources; coal in particular.... However, the coal industry's support of local government and schools, through property taxes, has not been realistic given the extent of the industry's mineral and fee property holdings. These huge fee and mineral properties and their assessments are a primary concern in West Virginia as an equalization problem.[6]

The first problem for the state was to determine who owned the coal reserves, and to map their location. Historically, assessors in the region had accepted the adage "you can't assess what you can't see." The state took a different position: "The problem has been that no one really was sure how to value coal in the ground since it was not generally visible and the extent and amount of coal property contained was difficult to determine. The industry always advanced the argument that it is impossible to assess property if you are not sure of that property's existence, location or volume. One of the first objects of the West Virginia Coal Appraisal and Assessment Program was to attempt to defeat the industry's arguments."[7] In 1970 the state began a program to map the ownership of mineral parcels. Then the following formula was adopted to value the coal reserves:

Value of coal per acre = per ton value X (seam thickness x 1500 tons)

Per ton value is computed based on a range of factors: BTU content, royalty rate, seam thickness, etc. By the summer of 1980, thirty of the forty four coal bearing counties had received their reappraisal figure . According to the Tax Commission, approximately $8,400,000 per year is accruing to the counties, and recently Governor Rockefeller declared that $23.8 million will have been collected by the end of the 1980 tax year.

While West Virginia's coal appraisal program is unprecedented in the Appalachian region, it has been criticized on a number of counts for still providing overly conservative estimates of coal values.[8] The program has proceeded slowly, with no mandate that the counties must abide by the figures. Assessors typically put their coal on the books at 50% of the state's appraisals. Groups like West Virginians for Fair and Equitable Assessment of Taxes have also questioned the accuracy of the program, when the highest valuations ($756 for Harrison County) and the lowest valuations ($67 in Dodderidge County) are in contiguous counties. Despite the shortcomings, the West Virginia program shows that coal reserves can be taxed, with adequate effort. The state now can claim, "Valuation of coal properties in the completed counties more nearly reflect the real world than do valuations previously shown."[9]

IV. Mineral Taxation: The Alternative

It is clear that there is a pattern of underassessment throughout the region, particularly in Alabama and Kentucky, though also in Virginia and Tennessee. Only West Virginia as a state has made a concerted effort to value coal in place, and its program is recent.

Some policy analysts argue the severance tax based on the number of tons produced is a more appropriate tax on coal than is the *ad valorem* or property tax. Tennessee, Kentucky and Virginia each have a form of severance tax, though the procedures used and revenues generated vary immensely. While the severance tax does serve to generate needed revenue, it may not necessarily serve the same purpose as the property tax. The severance tax is placed on the producer of the coal, leaving the owners of thevast coal reserves who lease the reserves to be mined affected only nominally or indirectly. Moreover, in the Appalachian region, the producers are often relatively small, local operators who bear an additional tax burden, while the large, absentee coal owners from whom they lease the coal pay next to nothing to the local government. Also, from the local government's perspective, a severance tax makes the tax revenues highly dependent upon the ups and downs of the coal market. Taxation of the coal reserves in the ground, on the other hand, could provide a steady stream of revenue for years to come.

From a policy perspective, there is no question that coal in place has value--particularly in these days of high energy demand and a national program aimed at increased use of coal reserves. In a U. S. Bureau of the Mines booklet, Donald Colby and David Brooks write, "Generally speaking, any mineral deposit that can be exploited at a profit today, or that will become exploitable within the next few decades, has economic value....The fact that minerals do exist for purchase, and the sale of mineral deposits and the rights to explore them proves that some economic value inheres in the resource itself."[10] However, as the figures above reflect, while the value of coal has increased rapidly in the last decade, the *ad valorem* taxes on the whole have not kept up: in Alabama, mineral taxes have not altered since the 1930's; in Virginia, tables used were established over

10 years ago; and in Kentucky, coal taxation has regressed to the current situation.

If minerals were to be appraised, how would it be done? As are other property taxes, the ad valorem taxation of minerals is based upon the concept of the "fair market value:" what a willing buyer would pay to a willing seller in a competitive market. In general, there are three accepted approaches for making such a valuation. The cost approach ascertains the building cost of improvements. It is only applicable to determining the value of mining operations on developed mines, and does not reflect the value of the coal in place. The market approach uses recent sales of comparable property to determine value. While this approach is relatively simple, and is the one most often used for other property, it is usually ineffective in Appalachia where much of the coal property has been owned by the same owners for decades, with few recent transactions. Where transactions have been made, they may not have been "arms-length;" the terms may be difficult to determine; or different geologic conditions of the coal may make them not comparable to other coal lands. A study by the West Virginia Tax Department has made the same point:

> After more research in coal property sales, it was concluded that because of the limited number of sales and the difficulty of finding similar and comparable coal land sales in some counties, this concept could not be utilized in most situations.[11]

The third approach, the income approach, is based on the capacity of the property to produce an income stream to the owner over a period of time. This approach is most applicable to mineral valuation.

In applying the income approach to mineral valuation, essentially two steps are required: 1) determining the future income of the owner, taking into account the amount of recoverable minerals, an estimated market price, and expenses to be incurred in developing the minerals, and 2) reducing the income to present worth, i.e. determining what a prospective buyer would be willing to pay today for the prospective income in the future. Each of these steps may be elaborated:

Determining the Future Income: When applied to the operator of a mine, this can be a complex process, involving estimating operating costs, depletion, depreciation, etc.[12] However, when applied to the owner of the resource, the process is simpler: roughly, the revenue stream is equal to the royalties received over the economic life of the coal. Thus, if an owner receives $2.00 a ton for five years, and one ton is mined yearly, the future income is $10.00. Few operating expenses or other factors are involved.

Determining the Present Worth of Future Income: This process involves "discounting" the future income to its present value. It is the reverse of compounding principal by a given interest rate. Using the previous example, this process would determine how much $10 accrued over five years is worth today at going interest. The discount formula may also take into account factors of risk or speculation. At a 20% speculative interest rate, the present value of $10 accrued over 5 years would be $5.98.

Simply put, then, the value of coal in the ground is equal to the total royalty it will produce to the owner over time discounted back to present value. Using this approach, it is possible to estimate the current value of a coal property which hypothetically produces one ton a year. Then, applying the figure to the 80 counties in the survey, an estimate can be made of the total tax value today of coal in place in the counties studied.

In making the calculations, various assumptions must be made. These assumptions are conservative, that is they will provide a conservative estimate of the real value of the coal in place:

> Rate of Production. Using predictions by the President's Coal Commission, national production can be expected to increase 28% by 1985, and 97% by 1990. From the year 2000 on, triple the rates of today's production can be expected.[13] Thus, for our hypothetical example, we can project that for every one ton mined in 1980-1985, 1.28 tons will be mined in 1986-1990; 1.98 tons from 1991-2000,and 3 tons from 2000.
>
> Life of the Resource. When the method is applied to a specific parcel of coal, the amount of reserves present must be determined, in order to determine the estimated life of the income stream. However, on an aggregate level, the problem is less difficult: Appalachia's coal reserves are expected to last for another 200 years. For the purposes of the calculations, we shall only use the income stream for the next fifty years.
>
> Royalty Rate. Royalty rates to coal owners inAppalachia have increased dramatically over the last few years, reflecting the growing value of the resource. A royalty rate of $2.00 per ton is used here. To be conservative, no increase in royalty rates is projected.
>
> Discount Rate. One of the most difficult problems is to ascertain the appropriate interest or discount rate to use. The higher the interest rate, the less the present value of the future income. In order to be conservative, i.e., to err on the side of undervaluation, a discount rate of 20% is used, approximately 12% reflecting current interest rates and 8% to take into account unforeseen risks. Based on the 20% rates, discount ratios are determined from standard mathematical tables.

Using these assumptions, we may return to the hypothetical example.[14] With the assumed increasing rates of production, a parcel producing one ton of coal a yea now will produce 91.6 tons over the next fifty years. At a royalty of $2.00 per ton, the total income to the owner will be $183.20. Discounted back to present value at a rate of 20% annually, the current value of the $183.20 is only $12.50. (In other words, at an interest rate of 20% compounded annually, $12.50 today will be worth $183.20 in 50 years).

TABLE III-7

Current Value of Income Stream on One Ton of Coal Per Year Increasing Over 50 years

Life of Income	Rate of Production		Royalty Rate		Discount Rate		
1st-5th years (1980-85)	1 ton per year	X	$2.00/ton	X	2.99	=	$5.98
6th-10th years (1986-1990)	1.28 ton per year	X	$2.00/ton	X	1.20	=	$3.07
11th-20th years (1991-2000)	1.97 ton/year	X	$2.00/ton	X	.67	=	$2.67
21st-30th years (2001-2010)	3.00 ton/year	X	$2.00/ton	X	.109	=	$0.65
31st-40th years (2011-2020)	3.00 ton/year	X	$2.00/ton	X	.018	=	$0.11
41st-50th years (2021-2030)	3.00 ton/year	X	$2.00/ton	X	.003	=	$0.02
							$12.50

Using this method, we can estimate the present value of coal reserves in the 80 counties surveyed. Based on 1977 production levels the 80 counties produce 195 million tons a year. At production rates predicted by the President's Coal Commission, and the assumptions given above, the present value of the coal reserves to be mined over the next 50 years is $2.4 billion. Using current average assessment and tax rates (calculated from the sample for each state), the total property tax to be produced annually from this coal value would be $21.7 million.

Currently, property taxes from all mineral property taxes (not just coal) in the 80 counties equals only $5.1 million. Thus application of even this conservative method of calculation would more than quadruple the mineral taxes generated from the 56 coal producing counties in the study. The new tax revenues would equal $16.5 million annually, or almost $300,000 per county. Eight million dollars of the new revenues would be generated in eastern Kentucky--where they are desparately needed.

If less conservative assumptions were made, the amount of revenue generated from an adequate coal appraisal program would escalate rapidly. For instance, if assessments were made on developed mines as well as the undeveloped reserves, as some attempt is made to do in Virginia and Tennessee, the amount would increase substantially. If all reserves were considered rather than just those to be mined in 50 years, or if a lower discount rate were used, the possibility of generating $50 million a year of coal property taxes in the counties studied would not be unreasonable. This would be a significant income source, equal to almost 50% of the total property taxes collected in these counties for 1976-77.

If ad valorem mineral taxation represents such a potential revenue source, why has it not been tapped? As in the case of explaining patterns of surface taxation, there is no single answer.

Partly, one suspects, the nonpayment of mineral taxes is the holdover of an historical period when the coal in the ground did not have the value that it has today. To update the assessments is a massive and complex task, requiring far more precise information than necessary for the above estimates. Local assessors simply lack the resources, the data, the staff or the skills to do the job.

If would be wrong, however, to give the impression that the problem is merely a technical one. In the coal counties of the region, the coal owners traditionally have had their own way, often using their political muscle to make or break the political fortunes of local officials--especially tax assessors. In many cases, the companies have supplied assessors with their own assessments of property values, and assessors have had little choice but to accept them. Where attempts are made to alter the traditional patterns of underassessment, the coal owners may simply refuse to cooperate, as was seen in eastern Kentucky where they failed even to return tax forms regarding their properties. In cases where local assessors have pressed the matter further, they have often found themselves beaten down in appeals procedures by a battery of technical experts and lawyers far greater than what the local assessors can muster by themselves.

Where changes have been made, they have been as a result of citizens' pressure combined with state intervention. Thus far, however, these cases in most states have been isolated and inadequate. For successful action upon the problem, state and federal assistance will be needed, to provide the resources for mapping and assessing coal reserves, as well as to provide the political muscle necessary for the task. While the task may at first appear a large and expensive one, the long-term return of additional revenues to local governments could be substantial enough both to improve local services, and to decrease the federal and state subsidies currently going to these counties.

The Problem of Tax Exempt Lands

Like concentrated ownership of surface or mineral lands by private owners, a concentrated presence of tax exempt government or private non-profit lands may also have negative effects upon a rural tax base. In a report on property taxation the Council of State Governments summarizes the issue: "Whether federal or state owned, exempt real property presents problems to local jurisdictions in which the property is located. Primarily, these problems are tax revenue loss, restraint of community development, and local government financial impoverishment."[5]

As indicated in the previous chapter, this study identified about 2.1 million acres of land held by government owners or by private non-profit owners, such as churches, universities or civic groups. The overwhelming portion of this land is government owned, usually by federal or state agencies. Of these, the largest owner--and the largest owner in the study--is the U. S. Forest Service with 1.2 million acres. While these lands are legally tax exempt (based on the landmark decision of McCullough v. Maryland), the U. S. Forest Service has accepted an obligation to make payments in lieu of taxes since the Weeks Act of 1911, which authorized the Agency to share with counties revenues derived from sale of timber and other uses of its land. In 1976, U. S. Congress further enacted the Payments in Lieu of Taxes Act which, in essence, sought to guarantee that counties with Forest Service or other federal lands received a minimum of 75¢ per acre of federal land in lieu of tax payments.

In the Virginia counties surveyed, the 75¢ per acre of federally owned land is less than what the ad valorem tax would be if the land were privately owned. For example, if the 70,000 acres owned by the Forest Service in Bland County were taxed at the same rate as the land owned by individuals, the county would receive 95¢ per acre; if the same rate were used as for out-of-state corporations, it would receive $1.06. A similar pattern is found in North Carolina. In Clay and Swain counties in North Carolina, the two counties with the highest level of federal ownership, the 75¢ per acre does not compare with the $1.05 per acre tax that out-of-state corporate owners average paying or the $1.22 that out-of-state private owners average paying. If the federal agencies paid the lower rate, $98,182 additional revenues would be generated; if they paid the higher rate, the additional revenue would be $158,518.

Not only are the federal acres taxed less, but the federal ownership in turn limits the amount of land and developments that are taxable: In Clay and Swain counties, for instance, only eight local owners own more than 250 acres each. One official in Swain County makes the point:

> Eighteen percent of the county is all that's taxable. Well, we just make do. To give you an example, this year's budget requests were cut drastically because we just don't have the ability to give services I think we should.

The effects of federal ownership may also be felt strongly where the Forest Servic is still purchasing land, thus removing it from the tax base virtually overnight. In Wythe County, Virginia where federal purchasing continues, the amount of reven the county receives per acre drops from $1.22 to 75¢ for every acre of forest lan purchased. Members of the Mount Rogers Planning District have gone on record opposing further land acquisitions by the Forest Service until the discrepancies have been reduced.

The problem does not stop with federal lands. Counties ususally receive no compensation at all for state lands within their borders. Of the six states surveyed, only North Carolina has a program of compensating local counties for state owned land. The lack of revenue may be especially significant in places like Morgan County, Tennessee where the state owns over 50,000 acres of land in state forests and for the maximum security prison, yet the county receives no compensation.

While the problem is significant, its solution is often out of the reach of local citizens or officials, who feel powerless to influence congressionally established payment systems. Though Virginia has passed legislation which allow local governments the option of imposing service charges on certain exempt properties, this study found no cases where the charges had actually been made. Certainly, while other states or counties might investigate similar options, rea change is not likely without federal action.

The Impact of Tax Patterns

Taken together, the underassessment of surface lands, failure adequately to tax minerals, and the revenue loss from concentrated federal holdings has a marked impact on local governments in Appalachia. The effect, essentially, is to produce a situation in which small owners carry a disproportionate share of the tax burden; counties turn increasingly to federal and state funds to provide revenues, while the large corporate and absentee owners of Appalachia's resources go relatively tax-free; and citizens face a poverty of needed services despite the fact that they sit upon taxable property wealth, especially in the form of coal and other natural resources.

The Impact of Tax Patterns: Who Bears the Tax Burden?

On the whole, the data from the sample of 33,000 owners in 80 Appalachian counties, substantiate this pattern: larger owners contribute less to the tax base relative to what they own than do the smaller owners. Several factors, as has been seen, affect the pattern: the larger owners of land have their surface lands taxed at a lower rate per acre than the smaller owners; the larger owners tend to own the bulk of the mineral wealth, which is not adequately appraised, and tend not to develop improvements on their land. On the other hand, the smaller owners have their land taxed at a higher rate than the large owners; they are also likely to improve their land and thus to increase their taxes as well. Federal holdings, which tend to be large, pay in lieu of taxes, but at a lower rate than privately held land. The additive result is an overwhelmingly regressive property tax system in rural Appalachia.

To help illustrate the point, the property tax burden can be measured by dividing the percent of taxes paid by owners in the sample by the percent of land owned to obtain a "tax burden ratio." As Table VIII shows, for the larger owners this ratio is low; as the landholders get smaller, the proportion of taxes paid relative to the amount of land owned increases. For instance, the top 1% of the owners own 22% of the land in the 80 counties but pay only 4.7% of the property taxes. The ratio of taxes paid to land owned is .21. By contrast, the bottom 1% of owners in the sample own .02% of the land in the survey areas but paid .23% of the taxes, a tax burden ratio of 11.5. The top 5% of the owners owned 31.3% of the land and paid 7.1% of the taxes, for a tax burden ratio of .23. The bottom 5%,owning .13% of the land and paying .30% of the property taxes had a tax burden ratio of 10 times as high, 2.3, and so on. In general, the higher one goes up the ownership ladder, the lower the property tax burden relative to the amount of land owned.

TABLE VIII: Land Owned and Property Taxes Paid by Owners

% Owners in Sample	Total % Surface Land Owned	% Property Taxes Paid*	Tax Burden Ratio**
Top 1%	22%	4.7%	.21
Top 5%	31.3	7.1	.226
Top 25%	42.7	10.0	.234
Top 50%	47.4	11.5	.24
Bottom 50%	2.82	1.59	.56
Bottom 25%	.95	.81	.85
Bottom 5%	.13	.30	2.3
Bottom 1%	.02	.23	11.5

*Data from 1977 Census of Government for fiscal year 1976-1977.

**The tax burden ratio is the percent of property taxes paid divided by the percent of surface land owned.

Source: Appalachian Land Ownership Study, 1980

Altogether, the owners in the sample (who themselves represent the larger property owners compared with the small owners not in the sample) own 53% of the total land surface in the 80 counties studies, yet account for only 13% of the total property taxes collected.

One could respond to these apparent inequities with the argument that the smaller owners are probably more likely to have improvements on their land, and thus property values contribute more to the tax base. However, the response itself helps to make the basic point: the net effect of the property tax laws and practices is to shift the tax burden on the smaller owners, likely using land for homes and businesses, while leaving the large corporate or absentee owners of the surface, who likely are holding land for speculative purposes and can afford to pay, carrying little of the tax burden.

The Impact of Tax Patterns: Federal and State Support

Even though the "poor pay more" while the property wealth of the region goes underassessed, the average county in Appalachia still does not generate adequate revenues for county services. In the 80 counties studied in this survey, only 22% of county revenues are raised from property taxes, while the average county in the nation as a whole gleans 31% of its budget from this source. For much of the rest of these funds, Appalachian counties must turn to federal and state sources. The average county studied received 49% of its revenue from non-local sources, while the average county nationally received 45%.[16]

Since the 1960 War on Poverty programs, of course, the nation's taxpayers have poured federal and state funds into Appalachian counties on the assumption that the funds were needed to develop a depressed region. The irony of the federal and state subsidies is that they are going to the counties with the most valuable taxable resources. Overall, for instance, the counties with the highest coal reserves receive the most outside subsidy--58% of the revenues of the major coal counties comes from federal and state sources, compared to 49% for the sample as a whole and 45% nationally. In Martin County, Kentucky, for instance, 86% of the total county budget comes from intergovernmental sources, despite the fact that the county contains some of the most valuable coal properties in the nation, owned by large and profitable corporations. However, the land in Martin County is taxed at only 39¢/acre for surface and less than 1¢ per acre for minerals under ground. In the twelve eastern Kentucky coal counties, 70% of the county budgets come from federal and state sources. Yet, if coal in the ground were taxed at rates comparable to other property using methods described earlier, the new revenue received would be $8 million, equal to 40% of the total revenues received by these counties from state and federal sources.

The net effect of these patterns contributes more to the tax inequities in Appalachia: funds provided in the name of aid to a poverty-stricken region serve, at least in part, to subsidize the property taxes of the region's large land and coal owners--who escape taxation. As a result of the underassessment patterns in the region, not only do the small local owners pay more, but other taxpayers, paying federal and state taxes, also bear an additional burden.

The Impact of Tax Patterns: Inadequate Services

Despite the fact that small owners pay disproportionately to what they own, and despite the state and federal funds pour into Appalachian counties, a number of county governments face a revenue crisis. As a result of the lack of funds, needed services cannot be provided.

As is seen in Table IX, while the average county in the country pays $220 per capita for service delivery, in the eighty study counties the average per capita expenditure is $206. Because of differing reporting procedures, a more accurate picture is seen by looking at each state. In every state except Tennessee, the per capita expenditure in the Appalachian counties studied is less than the per capita average for the state as a whole. In Kentucky and Virginia the contrast is particularly sharp: per capita expenditures in the southwest Virginia counties in the sample are 25% less than the state average and in the twelve eastern Kentucky counties, they are 23% less.

TABLE 9: Per Capita County Expenditures, 1977, by State and by Sample*

STATE	Average Per Capita Expenditure for State (Dollars)		Average Per Capita Expenditure for Appalachian Counties Sampled (Dollars)
Alabama	$ 96.84		$ 90.30
Kentucky	92.37		71.55
North Carolina	478.27		461.31
Tennessee	339.41		407.83
Virginia	539.79		402.26
West Virginia	58.41		49.07
National Average	$219.94	Sample Average	$206.20

*Data from 1977 Census of Governments. The large variations amongst states are somewhat due to differing reporting procedures. More accurate comparisons are therefore made within each state.

One of the most important services affected by inadequate property taxation is public education. According to the 1977 Census of School Finances, 51% of school revenues in the nation came from county or parent government sources 68% of the local funding for schools comes from the property tax, making "property tax revenue...the most important single source of own source revenue" for school systems.[17] School systems across the nation face a financial crisis due in part to inadequate property taxation. The same crisis exists in Appalachia. However, the irony in many Appalachian counties is that school systems need not experience lack of funds, for as has been seen, the region contains valuable, taxable resources from which revenues could be drawn. Yet, case studies in this survey show time and again that school finances are often most lacking in counties with the most resources. Examples may be found from each state in the study.

Martin County, Kentucky: Martin County, as has been seen, is now one of Kentucky's largest coal producing counties and yet 86% of its budget is derived from state and federal sources due to the inadequate property tax base. The largest owner, Pocahontas-Kentucky, a subsidiary of Norfolk and Western Railroad, owns 1/3 of the county's surface and 81,333 acres of mineral rights (equal to 55% of the county's surface). Yet its property taxes on its surface land are hardly enough to buy a bus for the county school system and the $76 it pays on its mineral rights would not even buy the bus a new tire, to replace the wear it receives on the county's unpaved and rough coal-haul roads. As a result of lack of funds, education expenditures in Martin County per pupil are 24% below the state average,and 43% below the national average. Other services suffer as well.

Walker County, Alabama: In Walker County,Alabama, the largest coal producing county in that state, the 28 largest landowners own over 65% of the mineral wealth in the county, yet contribute only $8,807 in property taxes on mineral rights. Of this, only $5,020 goes to education, not even enough to pay the salary of one school teacher terminated due to lack of funds in the county. For the last sixteen years, the Walker County School System has had to borrow money in order for schools to open each fall. For the past nine years, due to insufficient funds, the teachers in Walker County have been paid one to three weeks late each fall.

Swain County, North Carolina: The pattern extends to counties outside the coalfields as well. In Swain County, North Carolina where federal holdings account for over 80% of the land, and where, as a gateway to the Smoky Mountains National Park, millions of tourist dollars are also spent per year, the county cannot adequately support schools and other basic services. Despite a tax rate high for the area, the county is able to generate only around 30% of its revenue from local taxes. Intergovernmental revenues make up the rest of the budget. Because of the lack of funds, school facility construction has often been postponed; a 63 year old high school building was finally replaced in 1975.

Morgan County, Tennessee: Like Swain County, Morgan County has a large amount of tax-exempt land--over 55,000 acres are owned by the State of Tennessee for a state prison, a park and a wildlife area. The exempt state lands combine with poorly assessed coal, oil and gas lands to leave little property tax income for schools or other purposes. As a result, the tax rate of $7.55 per $100 value is, effectively, the second highest in the state. Still, funds are insufficient. Bus drivers have struck because of poor wages; school buildings are old and decrepid. In one school last winter students wore overcoats in class due to lack of heat. Under threat by the state to close the schools, the already overtaxed citizens have passed a bond issue as a short-term solution.

Wise County, Virginia: The largest coal producing county in the state, Wise County's immense coal reserves are owned primarily by just 10 companies, who control over one-half of the county's surface. Despite the county's mineral wealth, the school systems remain poor. In 1978-79, Wise County teachers were among the lowest paid teachers in the nation; the average annual teacher's salary of $11,506 was 24% below the national average. Conservative estimates (using the formulas presented earlier in this chapter) indicate that if the mineral reserves of the county were more adequately appraised, the new revenues would equal $1.25 million annually or 80% of the total taxes currently generated from real property in the county.

Lincoln County, West Virginia: In Lincoln County, expenditures per pupil and average salaries are consistently below those of neighboring counties; the county's students yearly rank 53rd or 54th out of 55 counties in test scores, and the school system has been under a court-ordered investigation due to its poor facilities and services. Yet, the county contains within it some of the most extensive oil and gas deposits in the region, with Columbia Gas alone owning over 270,000 acres of mineral rights in the county. A citizen's complaint against the undertaxation of these resources recently generated over half a million dollars in new revenue for the county, much of it going to the school system, but more funds are still needed.

How widespread is this pattern of impoverished school systems amidst under-assessed property wealth? What is the relationship between ownership patterns and school finance? Within states, such as in West Virginia, certain relationships have been found. As the West Virginia state report makes clear, low per pupil expenditures and teachers' salaries as well as high drop out rates are most prevalent in counties with a high concentration of land ownership. However, across states, the relationship is difficult to explore due to the differing school finance systems, which hinder the gathering of uniform data.

What can be explored, however, is a broader relationship between land ownership patterns and the median education level of a county's population. As we have seen earlier, the greater the concentration of land, the lower the taxes paid per acre. Where there is concentrated land ownership there might also be a shortage of property tax revenues for schools. While a number of factors affect median education levels--family background, economic opportunities in a given county, outmigration--certainly a key element is the ability of a school system to provide quality education for its students.

With these assumptions, and aided by the relationships seen in the case study data, we might expect that where land ownership is highly concentrated, then schools may be poor and educational attainment may be low. Where there is less concentration of land (and thus higher tax base) the quality of education might improve, and the educational level might also increase. When tested on the 72 rural counties in the sample, these expectations hold. In 29 counties with a higher than average concentration of land,21 or 72% had a lower than average level of education. By contrast, in the 43 counties with low level of concentration of ownership, only 21 or 49% had lower than average education levels. Put another way, of the 30 counties with high education levels, 22 (73%) were in counties with low levels of concentration of land ownership.[18]

Admittedly, the above test is inadequate fully to test the impact of land ownership patterns on school finances. As already stated, other factors may be at work besides the quality of the school system in defining education level of the population. Certainly an important element would be the nature of employment in the county, which as shall be seen in the chapter on economic development, is also related to land ownership. To determine the causal flow further, more precise analysis is needed. Nevertheless the point here remains: Concentrated land patterns, found to be associated with low property taxes, are also associated with a low education level of a county's population. One key may be the lack of necessary funds for quality school systems.

Conclusion

The dichotomy of ailing, underfinanced school systems amidst highly valuable property resources is only one of the many symptoms of inadequate property taxation in Appalachia. As this chapter has shown, the larger the owner of the region's land, the less the proportionate taxes paid. Gross underassessment of mineral resources--the average tax per known ton of coal in the ground is 1/50th of a cent--adds to the lack of tax revenues. In many counties, massive federal or non-profit holdings also contribute to the fiscal crisis. As a result of the inequities of the property tax system, the larger owners--usually absentee corporations--go undertaxed, while federal and state subsidies are poured into these "needy" Appalachian counties to provide a minimal level of services. Even with the intergovernmental subsidies, impoverished schools and inadequate services continue amidst growing, relatively tax-free, exploitation of the region's resource wealth.

Chapter III: Property Tax Patterns in Rural Appalachia

Footnotes

1. Dick Netzer, The Economics of the Property Tax, Brookings Institute, 1966, p. 16.

2. 1977 Census of Governments.

3. Valid land use date was available in only a portion of the counties, as discussed in the methodology chapter. Consequently, the total acres presented in Table V are less than the total surface acres in the sample.

4. Section 40-7-15 of Code of Alabama.

5. See Virginia State Report. For a more detailed analysis of the mineral taxation as it applies to Wise County, Virginia, see Sandra E. Williams, An Argument For a Reform in Methods Used to Assess Minerals Not Under Development in Wise County, (mimeo , October 1980).

6. West Virginia Tax Department, Local Government Relations Division, "Valuation of Coal Property for Ad Valorem Taxation," p. 1(n.d.)

7. West Virginia Tax Department, Local Government Relations Division, "The West Virginia Coal Appraisal/Assessment Program," p. 1 (n.d.).

8. Criticisms include 1) royalties are often derived from outdated lease and sales information in counties where the coal was acquired in the early 1900's; 2) per acre value does not include multiple seams where they occur; and 3) county averages of value per acre are based on a single, least valuable seam. This conservative methodology probably accounts for the fact that not one appraisal has been challenged in court. This argument regarding the conservative bias is made by West Virginians for Fair and Equitable Assessment of Taxes and "Mineral Rights and Property Taxation in West Virginia," by Mohd. Noor Bin Shamsudin and Dale Colyer, Division of Resource Management College of Agriculture and Forestry, West Virginia University, July 1979.

9. West Virginia Tax Department, op. cit., p. 5.

10. Donald Colby and David Brooks, "Mineral Resource Valuation for Public Policy," U. S. Bureau of Mines Information Circular, 1969, p. 1.

11. West Virginia Tax Department, "Valuation of Coal Property for Ad Valorem Taxation," op. cit.

12. See Colby and Brooks, op. cit.

13. President Coal Commission Report, "Staff Findings," 1980, p. 14.

14. In some caes, federal income taxes are subtracted from the income stream. However, since the two states in the study which use a method comparable to this one do not adjust for federal taxes, that has not been done here.

15. Council of State Governments, Property Tax: A Primer , p. 11.

16. 1977 Census of Governments

17. 1977 Census of School Finances, p. 2.

18. When median years of education are correlated with the Gini concentrations index for the 72 rural counties in the sample, Pearson's R = -.418 at the .0003 level of probability, i.e. the greater the concentration of land, the lower the median years of education. Using the concentration index described in Chapter IV, the relationship is less strong (Pearson's R = -.242 at the .0407 level). However, in the tourism counties, where large plots of federal tax-exempt land contribute to a low tax base, the correlation between the concentration index and median level of education rises to -.526 at the .020 level, and to -.447 where the Gini index is used.

CHAPTER IV.

LAND OWNERSHIP AND ECONOMIC DEVELOPMENT

Appalachia has long been recognized as an area that is economically underdeveloped when compared to other regions of the country or to the nation as a whole. In spite of the development faith that was apparent throughout the region around the turn of the century, this century has not seen the development of a mature, stable economy within the region.[1] Even as it moves into the last two decades of the 20th century, the region still finds itself overly susceptible to the fluctuations of the national and global economy. The boom and bust cycles of the coal industry and their economic and demographic effects are well known. The economic effects of development in non-coal areas are less well documented, but there is increasing evidence that such areas are subject to similar fluctuations, although perhaps less severe (e.g. the susceptibility of recreation-tourism areas to recession and energy shortages).

In the last two decades, many development agencies and policy analysts have maintained that Appalachian underdevelopment grows from lack of integration into the nation's economy. The strategy which flows from this school of thought focuses on the need to overcome the region's isolation through building roads and highways; on the need to provide seed capital for new industry; on the requirements of training the region's work force, etc. However, the policies growing from these perspectives have not concerned themselves with matters of ownership of the region's land and resources.

This view has been increasingly challenged over the last decade by one which suggests that even with growing "integration" into the nation's economy, economic development may not occur. Rather, the view suggests, economic underdevelopment is associated with the external control of land and natural resources, which limits diversified growth and removes the wealth from the region. From this perspective, widely articulated by Appalachian writers, Appalachia is sometimes likened unto a "colony," a victim of the same forces of corporate exploitation that affect the Third World.[2] Through control of the region's land and natural resources, these forces prevent the formation of the indigenous financial control and other requisites for economic development. For development to occur, in this view, strategies must be developed which deal with the problems of ownership and control of land and mineral resources.

Studies of the early industrial development of Appalachia would seem to lend credence to the latter school. Whether we look at the general historical literature or specific case studies, the story is the same--massive investment by external interests for the purposes of exploiting the region's natural and human resources. The years of change at the turn of the century (1880-1930) began a process of concentrated control of land and natural resources, and of subordination to outside interests, that permanently altered the economic and cultural face of the region.[3] While the extent of this process varied from area to area, the attractions of vast virgin forests and massive coal reserves were powerful magnets for outside corporations, speculators, and entrepeneurs, who focussed their initial investments on acquisition of land and resources. The next several generations would reap mixed benefits from the economic development thus set in motion.

Regardless of the part of Appalachia that we examine, whether coal or non-coal, the early economic development seems remarkably similar. In the Blue Ridge counties of North Carolina and Virginia, as well as in numerous counties in the Cumberland-Alleghany plateau, the coming of railroads spurred the exploitation of timber resources until they were exhausted (e.g. **see** Swain, Watauga, Grayson, Wise, and Logan case studies). In some of these areas, the devastated land was later "salvaged" by the National Forest Service. In the Cumberland-Alleghany Plateau counties the development of mineral resources (particularly coal) attracted immense amounts of outside capital (e.g. see Campbell Mingo, Logan, Wise case studies). Population booms resulted that were to presage the waves of in and out-migration associated with the fortunes of the coal industry. In many of these counties a pattern of absentee, concentrated corporate ownership developed that has become more or less permanent.

What is the impact of these land ownership patterns on economic development today? While simlar in origin, they seem to vary in the types of counties studied. This chapter will examine the impact of land ownership patterns on economic growth in coal and tourism counties. The following chapter will then look at the effects of land ownership on another important sector of the regional economy--agriculture.

Economic Development in the Coal Counties

1. Ownership Patterns.

In the chapter profiling land and mineral ownership in Appalachia (Chapter II), we saw that corporate, absentee and concentrated ownership are all evident in the major coal bearing counties in the sample. These findings may be summarized:

> --In the 33 major coal counties, 50 percent of the land sampled (representing 27 percent of the total land surface) is corporately

> owned, compared to 31 percent in the agricultural counties and 23 percent in the tourism counties. Of the mineral rights surveyed in these counties, 72 percent of acreage is owned by corporations.
>
> --Absentee owners in the coal counties own 72 percent of the land in the survey, and 89 percent of the mineral rights.
>
> --Not only are land and mineral resources corporately and absentee held, but their ownership is also highly concentrated in a relatively few hands: In the coal counties, the top 25 percent of the landholders in the sample own 56 times the amount of land owned by the bottom 25 percent of owners. Altogether, the absentee, corporate, government and large individuals surveyed control 54 percent of the total land in the coal counties.

What effects do such concentrated, absentee, corporate ownership patterns have on economic development in the coal counties? They involve the power to control economic change, the drain of wealth from the region, and the impacts of the single industry economy which derive from these ownership patterns.

In general, even today the greater the concentration of land in an area, the greater the ability of a few owners to dominate the economic development. In Logan County, West Virginia, where nearly all the mineral wealth is concentrated in the hands of eleven corporations, local resident Roscoe Spence summed up the pattern:

> By controlling land, they controlled the jobs; by controlling jobs, they control the payroll; by controlling the payroll, they once could control where people bought; by controlling where people bought, they could control profit on earnings. It was a stacked up thing. The effect of it is that people who control the land control everything.

While the control may not be as absolute in some of these areas now as it was in the traditional company towns, the power of absentee corporate owners to affect the economic future of local communities is still massive. The entrance of multinational energy conglomerates into the coalfields of Appalachia has brought a new scale of capital investment, technology and corporate power to the region. Control of resources development (and thus the local economy) is moved farther from the local or state level, at the same time that single corporate decisions can radically change the economic future of a county. Whether in the traditional company town, or in the new era of oil controlled coal, the basis of the power in the region remains the same--ownership of the land and its resources.

These ownership patterns, one should recognize, do not occur at random, but instead are concentrated where the resources are and where the greatest wealth of the region is to be found. In general, in the sample, a greater degree of corporate control is associated with the greater reserves of coal, a greater production of coal, and with the most "value added" in mining.[4] In turn, the control of resources helps to create a dependency on mining jobs for employment, such that the greater the corporate control of land and minerals, the greater the percent of the labor force employed in mining.[5] While the average coal county had 15 percent of its work force employed in mining, in a number of instances the figure was much higher. Examples are found in the case studies: in Mingo County, whose fate has always been linked to coal,35 percent of the labor force is in mining (1976). In other counties with a high degree of corporate ownership, the figures are similar: Harlan, 38 percent (1974); Pike County, 34 percent (1970); and Wise, 25 percent (1977). Throughout the region, the control of land by a single industry brings with it control of jobs, helping to create dependency of workers and their communities both on the landholders who own the resources, and the employers who provide the jobs (often these may be one in the same.)

2. Economic Impacts of Ownership Patterns: The Drain of Wealth

Accompanying concentrated corporate control in Central Appalachia is an absentee ownership that draws the wealth from the region. In 1884, a West Virginia State Tax Report warned that residents should become aware of the wealth of their minerals or "this vast wealth will have passed from our present population into the hands of non-residents, and West Virginia will be almost like Ireland and her history will be like that of Poland." Over time, that prediction has become an accurate one. Like corporate ownership in the major coal counties, absentee ownership, particularly out of state ownership, is associated with the greatest extent of coal production.[6] As a result, large amounts of capital leave Central Appalachia, according to a government report, and enter "the financial markets centered around New York" and other metropolitan centers.[7] Another indication of the drain of wealth is that a smaller portion of bank deposits in the coal counties studied are in time deposits (54 percent) than is the case in the non-coal counties (71 percent), suggesting that many deposits may merely be pass-throughs to other financial institutions outside the region.

Local planners, who are constantly faced with the problem of inadequate financial resources for development projects, recognize the outflow of wealth as a major problem. In the words of a planner in Harlan County:

> Harlan is one of the wealthiest counties in the country, but not in terms of local capital or development. The money is not in Harlan banks, but in banks located in the eastern part of the United States.

The loss of wealth to the absentee owners leads another planner in Pike County to observe "there needs to be controls on the amount of money absentee companies take out of the county...."

Even within the region, however, there are numerous indicators that this coal dependent economy is not one in which the maximum number of people benefit. While there is no doubt that a small number of indigenous residents have gotten very rich from the coal boom of the last decade, the wealth of these few regional entrepeneuers exists alongside considerable poverty and employment instability. For example, in Pike County (usually touted in the media for its personal wealth and with one of the highest median incomes in the coal counties), 20 percent of the county's population had incomes below the poverty level in 1978. In Martin County, a current boom county, one third of the population fell below the poverty level (1976); in Harlan 25 percent were below poverty level (1978), despite the coal boom. And while average incomes have generally increased over the last decade due to the coal boom, this tells only part of the story. These incomes (both per capita and median) are still usually less than the respective state averages. In 1977 Mingo was 30th of 55 counties in West Virginia in per capita income. For the coalfield counties surveyed in Virginia where corporate owners control almost one third of the total land area, the average per capita income was only two thirds of the state average;and the median family income was only 63% of the state average. Wise County, Virginia demonstrates the apparent failure of the benefits of the coal boom to trickle down throughout the local populace. While per capita income increased between 1970 and 1977, the percent of total personal income derived from transfer payments also increased substantially (from 15.6 percent of 19.4 percent).

An analysis of economic development patterns in coal counties of Appalachia must start,then,with several observations: the dominant single industry development is highly dependent upon the control of a few, primarily corporate hands, who control the land and resources; while large amounts of wealth are produced, much of it leaves the region. Even the wealth which stays in the region is unevenly distributed leading to the persistence of poverty amidst riches.

3. Economic Impacts of Ownership Patterns: Non-Diversification

In order to offset these patterns, economic development agencies such as the ARC have adopted a strategy of economic diversification. Counties like Russell County, Virginia have taken a similar stand:

> The area's leaders should do everything in their power to attract other industry, so that the area's economy is not so strongly tied to coal. The coal industry has a volatile history, and it is important that our dependency on coal is reduced.

Individual residents affected by the lack of alternative opportunities often express the problem more poignantly. Says a Harlan County woman: "Mining will be the life of my three sons. If they don't mine, they can't make a living: either you mine coal or you push a buggy at Cas Walkers' (supermarket)."

Despite the fact that economic diversification is a widely expressed goal, non-diversification continues as the order of the day. The patterns can be seen by comparing the percentage of the work force in mining, with the percentage in manufacturing, for select counties. On the average, in the major coal counties, 18.5 percent of the work force were engaged in manufacturing, compared to 28 percent for the overall sample. In some counties, in the heart of Central Appalachia, the problem is more apparent. For instance, in Mingo County in 1976, 35 percent were employed in mining while only 7.4 percent were in manufacturing. In Harlan County in 1974, 38 percent were in mining and only 5 percent in manufacturing. And in Martin County there are no manufacturing plants at all.

A number of reasons have been given by development agencies for the lack of economic diversification. These include isolation, topography, poorly trained work force, and lack of transportation and services infrastructure. While this study is neither able to analyze each of these independently nor their relative importance, our data suggest that the impact of land ownership patterns must be included as one of the elements contributing to the lack of economic diversification.

The strongest indication of the effects of land ownership patterns is seen in the proportion of the work force engaged in manufacturing: the greater the corporate ownership, the lower the percentage of the work force in manufacturing. Out-of-state ownership, too, evidently has a negative effect on the percentage of the labor force in manufacturing.[12] There is also a relationship between out-of state ownership and the number of manufacturing establishments such that the greater the out-of-state ownership, the lower the number of manufacturing establishments. And a similar negative association is found between out-of-state ownership and the value added in manufacturing.[13]

In the Virginia coal counties there is a noticeable absence of non-coal related industries in counties most dominated by absentee corporate control of land and minerals. For example, Buchanan County, with a high level of absentee corporate ownership, had only 3 non-mining related manufacturing establishments in 1976, whereas Tazewell County, with a relatively moderate level of such ownership, had 14 non-mining related industries. While other factors may be operating in this differential, our regional correlations for coal counties indicate that absentee and corporate ownership are important contributing influences.

If land ownership patterns do impede economic diversification, what are the mechanisms by which this happens? The two most prominent means seem to be: problems with the availability of land and the lack of an infrastructure adequate to attract and maintain diversified industry. In the words of the managing director of the Logan County Chamber of Commerce: Logan County needs more industry, but the first thing they ask us when they want to come is if land is available Then they ask about water and sewage. Of course, all of the answers are no." (Logan Case Study).

Availability of Land

In many instances found throughout this study, the interest of the large land owners seems to be simply in holding the mineral lands for speculation and future energy extraction, rather than in making them available for other forms of economic development. The effect is to keep land off the market and out of the local and regional economy, thus, among other things helping to insure their control of that economy. The extremely low taxes paid by the companies allow them to do this at little expense to themselves and with little contribution to local tax revenues. In Pike County, the impact is described by a former mayor of Elkhorn City:

> This corporate ownership keeps the community from growing. As far as absentee owners, they don't spend no money in the county or in the state. I was raised next to Kentland's property, and they never did anything with it, just left it sitting. I know they've owned it for 50 years or more. They pay pasture taxes on coal rich land. Where I grew up on Ferrell's Creek, Kentland owns the bottom land, big bottoms just sitting there.

Case studies report that land for industry and/or housing is often scarce in many counties, partly as a consequence of this continuing underdevelopment of vast areas of land. In Pike County, for instance, most of the coal-related corporations have not seen fit to sell their land for alternative industrial or commercial development. In Martin County, the land holdings of Pocahontas Kentucky, the dominant owner in the county, remains undeveloped except for coal mining. In Campbell and Claiborne Counties, Tennessee, a local development group has been unable to obtain land for industry. In Harlan County, the expense of purchasing land with no improvements is prohibitive. In Mingo County, the only manufacturer of any size in the county is reportedly leaving due to a lack of land for expansion. Thus, in those case study counties at least, the refusal of corporate land owners to sell their land for non-coal uses limits the areas in which commercial and housing can take place. However, while the availability of land is a necessary condition for industrial development, it is not a sufficient one. Several other factors also affect where and how development occurs. Among those factors is the necessity for a services infrastructure.

Inadequate Infrastructure

Among the numerous factors considered by an industry in its decision on whether to locate in an area, the presence of an adequate services infrastructure is usually high on the list. Decades of absentee corporate ownership in the Central Appalachian coal counties have failed to produce adequate water, sewer, transportation, health and educational facilities. This has come about for several reasons, only a few of which can be discussed here.

Certainly, one of the most obvious factors is that corporately owned coal interests have not produced sufficient taxes to provide local revenues to develop such services. The minimal tax revenues received have hardly been adequate to meet the immediate needs of local communities, much less to provide the additional resources necessary for developing new services. The general pattern of under-assessment in the coal counties, often supported by local and state government has been discussed in an earlier chapter.

Past attitudes and behavior of large corporate owners have also played a critical role in the present condition of such services as water and sewage facilities. A former health officer in Logan County spoke of the persistent tendency of some land companies to oppose sewage and water laws. In other instances large corporate holdings inhibit diversification by directly preventing the construction of such facilities. When such holdings are adjacent to urban communities, the result is often uneven development since the construction of necessary facilities is restricted either to already built-up areas of the county or to more distant properties not owned by such companies.

In addition, the lack of locally available capital associated with absentee ownership minimizes the local funds available for housing loans, underwriting of industry and business, and construction of needed service facilities. In some counties landholding companies can effectively control the use of local capital through the placement of company or family representatives on bank governing boards or by obtaining controlling interest in a number of local financial institutions. The situation in Logan County is reported to be such that no capital projects can be undertaken without the sanction of one of the largest corporate owners in the county. The power and wealth of such companies often result in an arrogant disregard for the economic and social development needs of the localities in which they operate. A county planner in Pike County, Kentucky refers to this as a lack of civic pride and speaks of the need to "force a little civic pride." A former health officer in Logan County, West Virginia puts it more bluntly in his assessment that railroad companies "have historically operated a public be damned basis." The net effect is summed up very aptly by a resident of Martin County: "These companies are taking their money out of the state and leaving nothing behind but wages: no roads, no recreation, nothing."

This history of one industry dependence and its associated obstacles to industrial diversification have left most planners pessimistic about any chances of alternative economic development. Rather, the future is coal! There is almost an exuberant faith in the expansion of coal and its benefits. Local officials and planners alike seem to have jumped aboard the synfuels bandwagon as they compete for liquefaction and gasification plants. Even regional planning units seem to be resigned to, if not enthusiastic about, the future of coal and the non-future of alternative industry. For example, a planner with LENOWISCO, a planning district in the southwestern corner of Virginia, said simply that the agency did not see economic diversification as a realistic goal for Wise County.

The Boom and Bust Economy

While the faith in the promise of coal development is currently strong, the dependency on this single industry still heightens the degree to which the region is subject to a boom and bust economy. It is perhaps, too, the boom and bust cycle which helps to disguise the more permanent conditions of relative poverty of a large number of the population. When times are bad, they are bad for all; when they are good, the boom helps to cloud the fact that they are still bad for some. In fact, booms , as well as busts, place strains on local communities--strains aggravated by the patterns of concentrated land ownership.

Problems with Booms

While booms may bring with them increases in jobs and wages, they also carry with them less positive effects, mainly those associated with rapid population growth, increased demands for public facilities, housing and services. For communities in which a diversified mature economy is already in place, there may be a capacity to absorb such rapid economic growth.[8] But for areas lacking such prior development, the strains are likely to be greater, and they may be intensified by ownership patterns. For instance, for a county already lacking available land for housing and public facilities, a rapid influx of population will place even more demands on existing stock, leading to overcrowdedness, and rising prices. For counties historically plagued with patterns of underassessed corporate land, funds for providing new services are simply non-existent. Schools become more overcrowded and roads overused.

Of course, the boom town syndrome has long been a way of life in the region. During the first half of the century, many of the counties in the Central Appalachian coalfields experienced dramatic population growth, largely the result of rapid expansion in the region's coal industry. Now new proposals for the production of energy including coal mine expansion and new synthetic fuel plants indicate the possibility of a new boom period for many communities.

An example of how the already existing problems of "boom town" growth can be exacerbated by land ownership patterns described in the Wise County, Virginia case study:

> Once a rural agricultural area, Wise County was rapidly transformed by coal industrialization at the turn of the century. The population of the county grew from 9,345 in 1890 to 19,653 in 1900 to 34,162 in 1910--a 266 percent increase in twenty years. With the growth, came a change in ownership and use patterns. Prices skyrocketed as speculators bought and sold land. By 1928, four large coal companies owned more than two thirds of the land area in the county Land used for agriculture dropped rapidly: in 1860, four years after the county was organized, 196,606 acres of the county were considered farmland; by 1910 the farmland acreage had dropped to 122,848, by 1920 to 72,877 and by 1969 to 20,707 acres. In the 1930's and then in the 1950's Wise County was hit by a coal depression. With their land and agricultural base gone, without a diverse economy, people left the region. Population declined to 39,039 by 1971, the lowest level since before 1920.
>
> However, with the increased energy demand of the early 1970's Wise County was again faced with a coal boom. Population increased by 7,000 people between 1971-75. With land still tightly controlled and unused by coal owners, there was little room for economic or residential expansion. By 1975, 74 percent of the population lived in areas classified as "urban and built-up"--an area constituting only two percent of the county's land area. While for the whole county, population density was only 111 persons per square mile, for this two percent of the land it was 4,035 persons per square mile, more crowded than the cities of Richmond or Roanoke. With the population increase, housing and other prices soared, the county experienced climbing crime rates, cultural disruption, and strained services. Now, the county faces the possibility of further population boom. There is a possibility of a synthetic fuels plant. However, according to a Department of Energy study the construction phase of the plant could more than double the existing population, and the permanent population could increase by 4,600.[9]

How can the county cope? And, with corporate owners still controlling so much of the private land, where will the people go?

Not only does the concentration of ownership hinder adequate planning for economic growth, but the aura of corporate secrecy which often characterizes plans for economic expansion may also make matters worse for local officials. Given the scale of capital controlled by the contemporary, corporate owners of Appalachia, decisions about a single new mine or plant by a corporation can have major consequences for a local community. Yet, rarely are local officials or citizens given information for full planning to meet these contingencies. An example is found in Scott County, Virginia, in which the small community of Dungannon has been beset by rumors of a major new mine being opened by Consolidation Coal Company, a subsidiary of Continental Oil. Local citizens and officials have tried for some time to clarify these plans so that they can plan accordingly. They have met with little success and instead are faced with major uncertainties about future developments in the county. A County Commissioner noted that: "All Consolidated told one member of the board of supervisors is that until they decide to make an announcement, they won't say anything." In the same area, another firm is laying plans for the development of a large synthetic fuels plant. But company representatives have refused to answer questions about the facility in public meetings.

Thus, in a manner reminiscent of previous boom-bust cycles, the public is left in the dark as to plans that will possibly precipitate a new boom period. They are once again left to the mercy of a coal dependent economy manipulated by corporate interests beyond their control or influence. Given this dependency and their inability to influence corporate decisions, they are left to wonder if the projected boom is but another prelude to a bust for which they will bear most of the consequences. These busts can be devastating to the local community and its residents.

Busts

Dependency upon a single industry heightens the impact a "bust" can have on a local community. When the coal or energy market is down, unemployment is rampant; there are no other job options. Lacking the tax base, which in many counties is increasingly built upon the rate of coal production through the severance tax, communities and services suffer. Facing no other alternatives, people leave the area in search of employment and better community conditions.

Case studies and state reports in this survey illustrate the out-migration patterns, which occurred most dramatically during the coal decline in the post World War II Period (1950-1970). For instance during this period, the Big Sandy counties of Kentucky lost nearly 100,000 people to out-migration; the four survey counties in the Kentucky River area lost about 88,000 people; Harlan, Bell, Knox, and Laurel counties of the Cumberland River Basin lost 100,000 people between 1950 and 1972 (Kentucky State Report). In Logan County, 34.3 percent of its population left following the coal slump of the 1950's; between 1960 and 1970 the population declined another 24.9 percent (Logan Case Study). The population of Wise County, Virginia including Norton, reached a high of 56,336 in 1950, declined by approximately 14 percent to 48,592 in 1960, and declined again by over 17 percent to 40,119 in 1970 (Wise Case Study). For all the coal counties surveyed, the average rate of out-migration from 1960-1970 was 19.5 percent

There are complex reasons, of course, why busts in the coal economy occur when they do: mechanization, the advent of strip mining, a changing market for coal--all were factors contributing to this particular decline. While land and mineral ownership patterns contribute to decisions on where and when coal is to be mined, they are only one element governing the boom and bust cycles of the coalfields.

The important point for this study, however, is that concentrated land ownership patterns limit the economic options which do exist when busts occur. Where land ownership patterns limit economic diversification, few other jobs are available. With concentrated land ownership, access for much of the population to the land itself is limited, even for tilling the hillside--a traditional mode of survival in the region. When a "bust" occurs, the likelihood of out-migration as the only option increases.

If this understanding is accurate, then we might expect that during times of decline in the coal market, coal counties with a higher degree of control of land resources will experience higher rates of out-migration than will counties where the land patterns are more diversified. Indeed, such would appear to be the case. Generally speaking, for the coal counties surveyed in this study, there is strong positive association between the degree of corporate ownership in a county and the level of out-migration from 1960-1970.[10] There is a similar association between the level of absentee ownership, especially out-of-state ownership, and the rate of out-migration during the same period.[11] An example may be found in Harlan County, Kentucky, where 64 percent of the land is owned by corporate and absentee interests, and 38 percent were employed in mining. Between 1960 and 1970 Harlan County lost 36 percent of its population. In West Virginia, only one of the sample counties with a high concentration of large corporation and government holdings experienced a growth in population between 1950 and 1976, while nine lost population. McDowell, Logan and Mingo,which have the greatest amount of this type of ownership,were among the top five in population loss, losing 48 percent, 38 percent and 26 percent of their population respectively (West Virginia State Report).

The migration patterns in the coal counties of Central Appalachia have changed over the last decade, brought on by a rise again in the coal market. For example, Mingo saw an 8.3 percent population increase between 1970-76, accompanied by a decrease in the unemployment rate. Logan gained 1,000 jobs between 1970-76 and showed a slight increase in population. Wise County, which in 1971 had its lowest population since prior to 1920, saw an increase of 6,000 people from 1970-7 The counties in the eastern Kentucky river basins also saw population increases.

However, this reversal of out-migration in the coalfields is deceptive. There is no indication that the dependence on the coal industry has been altered or that a healthy, diversified economy has developed. If historical experience is any indicator, the current expansion of the coal industry will be subject to the same ebbs and flows of its predecessors. Indicators of such instability were already evident in some areas as the decade ended, when there appeared the anomaly of increasing coal production accompanied by decreasing employment in mining. For example, in West Virginia coal production increased 33 percent in 1979 to the highest level since 1973, while at the same time as amny as 10,000 coal miners were out of work. Without economic diversification, without removing the dependen upon a single industry, the economic susceptibility is likely to continue.

In this section we have argued that the prevalent land ownership patterns in the coal counties contribute to the single industry economy and lack of industrial diversification. The fortunes of that coal economy are heavily dependent upon the control of a few, primarily corporate owners, who drain away much of the economic wealth of the region. Meanwhile, many of the residents of these counties experience poverty amidst wealth and are vulnerable to the insecurities of continual boom and bust cycles of the coal industry. Both their poverty and vulnerability are enhanced by the lack of alternative economic opportunities that would be available in a diverse economy. The lack of available land and an inadequate services infrastructure, both legacies of the dominant land ownership patterns, play a significant role in this economic underdevelopment.

ECONOMIC DEVELOPMENT IN TOURISM COUNTIES

The history of tourism counties differs from that of many coal counties. Their initial development at the turn of the century was not predominantly recreational, whereas energy development was clearly in the cards for the coal counties. However, the turn-of-the-century experience of what were later to become recreational counties was similar to that of the coal counties in that economic development was based on extractive industry. Just as coal and timber resources had attracted outside capital in the coal counties, the vast virgin forest resources of the Blue Ridge and Alleghany Highlands attracted outside investment. This investment, coupled with the building of railroads into these hinterlands, was to spur enormous growth in the lumbering industry over the next few decades. Single industry--often single company--towns sprung up where nothing but wilderness had existed before.

This period of change, from the 1890's to the 1920's , was a boom era for many of these counties. In Swain County, lumbering became a major industry in the early 1900's and continued so until the mid-1920's and the creation of the Great Smoky Mountains National Park. The population of the county grew from 10,412 in 1918 to 13,224 in 1920, the kind of surge representative of many such counties. Watauga County experienced a boom that lasted into the 1930's by which time the timber resources of the county were largely exhausted. It was a time of relative prosperity, but the extractive basis of that prosperity and the timbering practices of the companies were ultimately to insure its end. The timber that fueled the building needs of a developing nation was to provide few long range economic benefits for its host counties.

Instead, the legacy was the virtual exhaustion of the area's forests, environmental devastation and ghost towns, some of which were later to be promoted as tourist attractions. By the late 1920's the boom had run its course in most of the counties and the effects of the bust were readily apparent. Many of the towns built on the foundations of the timber industry were either reduced to rural villages or had disappeared altogether (e.g. the twin towns of Whitmer and Horton in Randolph County, West Virginia). With the exhaustion of the timber resources these towns had little economic base, nor were the railroads of any further value. They were instead to become relics of the past, some to be developed as tourist attractions to supplement the later tourist appeal of the area (e.g. Cass Scenic Railroad, Tweetsie Railroad).

The exhaustion of the timberlands in the region also encouraged the entrance of a new type of ownership in the region--that of the federal government--which was to stimulate recreational development as the basis of local economies. It was in part the legacy of devastation that led to the acquisition by the National Forest Service of large acreages of "forest land" for purposes of timber management and preservation. One of the major impacts of this and other types of federal ownership (e.g. national parks and recreation areas) over the last several decades has been to encourage tourism and recreation, perhaps at the expense of other economic development. While there were certainly signs of the coming tourist/recreation industry already present, extensive federal ownership provided an incentive without which the history of recreational development would likely have been more gradual and less dominant in local economies.

Ownership Patterns in Tourist Counties

While coal counties are dominated by corporate land ownership, the tourist counties reveal a pattern of government and individual ownership. Government ownership accounts for 29 percent of the land sampled in these counties, three times the level found in the high coal counties and almost double the level found in the agricultural counties. As one might expect, there is a strong correlation between the percent of government ownership in a county and the level of recreation and tourism development.[14]

Despite the federal presence, individuals still account for 48% of the land in the sample. However, much of this is accounted for by absentee individuals who likely are holding land for speculation or second homes. In some recreational counties, the level of non-local individual owners has increased dramatically in recent years, as tourism and recreation have become increasingly the basis of local economic development. This trend was documented in a study by the North

Carolina Public Interest Group which noted that from 1968-1973, the total number of acres held by local residents in their ten county study area dropped by 10 percent, while non locally-owned land jumped from 28 percent to 36 percent of all private land.[15]

The combination of land held by absentee individuals and the federal government in the tourism counties leads to a level of absentee ownership comparable to the coal counties. And the degree of control of land in the tourist counties by all of the absentee, government, corporate, and large individual owners in the sample is even greater than in the coal counties. In the tourist counties, those interests control some 60% of the total land surface.

Economic Impacts of Ownership in Recreational Counties

At first glance, the Post World War II economic experiences of the recreational counties have not been characterized by the extremes that affected the coal counties. Even though some of the recreational counties experienced something of a bust surrounding the 1974 energy shortages and recession, most have have not had the dramatic population fluctuations of the coal counties. For instance, western North Carolina counties continued to gain population during the 1950's and 1960's, contrary to the trend in the coal counties. This was probably due to several factors: the presence of small farm agriculture, the absence of extractive industry dominance, and a somewhat improved and more diversified economic situation. Watauga County actually experienced a population increase of 33.5 percent from 1960 to 1970, precipitated by the growth of Appalachian State University and the recreation industry.

So, if one were to use population growth as an indicator of economic growth, it would appear that the situation in these counties improved dramatically during the 1960's-1970's. Or if one were to take the rate of employment growth as a sign of economic growth, counties like Watauga (with a rate of employment growth three times population growth during 1960-1973) would seem to have developed very healthy, dynamic economies. However, in many of these counties an old familiar pattern was emerging--that of one industry dominance. Spurred on by federal forest ownership, the promotions of state, local and regional agencies and the proximity to vast urban populations, the recreation industry began to experience phenomenal growth and to dominate other sectors of the economy. In counties like Watauga and Avery, a rapid increase in such development over the last twenty years brought with it a surge in second-home and resort developments. (See discussion in Housing Chapter, and in Watauga County Case Study.) A new economic dependency was in the making, which, like those in other areas of Appalachia, meets the needs of outsiders at the expense of local residents.

The subsequent economic development has been neither diversified, nor stable. Nor has it in most instances lived up to the rosy predictions of its supporters. For example, in Grayson County (an agricultural county slated for recreational development), the predictions of a local leader that Grayson Highlands State Park would bring in 200,000-500,000 persons per year has proven more illusion than reality. The total visitation for the 1979 season was 18,000, approximately half the total for 1978. Yet, in spite of such experiences and numerous studies that have questioned the advisability of recreational development, regional planners seem to have maintained their enthusiasm for it.[16] But what are the real impacts of recreational development and its associated land ownership patterns on local economies?

The impact of recreational development on the economic situation of area residents can be examined in several ways: the types of employment it produces, the development it encourages in other economic sectors, and the development it impedes in other sectors. There has been much disagreement about the overall economic benefits of recreational development for local residents but our findings suggest agreement with the position that "for the majority of the people the economic impacts are more negative than positive."[17] This would confirm ARC's preliminary investigations into the impact of tourism and recreation in Appalachia which warned that the resort industry is one of "low pay and seasonal in nature."[1

The pattern of low wages and seasonal work is indicated in our study in several ways. For instance in Swain County in 1976, 23 percent of the total labor force was engaged in travel and tourist-related employment. This, coupled with manufacturing employment in low-wage textile and furniture industries, produced a per capita income in 1977 of $4,368. Only 16 other counties in North Carolina recorded lower figures for the same period. While the employment rate has grown considerably in Watauga since the mid 1960's, it does not seem to be reflected in increased wages and income, since much of the growth has been in low-wage and seasonal employment. In 1973, for example, the county's per capita income was only 73 percent of the state average. In 1976 the average weekly wage was only 76 percent of the state average, further indication of a low-wage economy. Another county experiencing the seasonal and low-wage employment of resort and recreational development--Cumberland County, Tennessee--had a per capita income 67 percent of the state average in 1977.

Given such considerations, one must question the promises of recreational development as a strategy for economic resuscitation, a rationale given for the Mt. Rogers National Recreation area in southwestern Virginia. One of the counties projected to benefit is Grayson, until fairly recently a predominantly agricultural county. In 1950, when employment was primarily in the agricultural sector, the average weekly wage was 83 percent of the state average. In 1977, after a significant shift away from agriculture, it was only 58 percent of the state wage. The proposed National Recreation Area,once fully developed, is touted as a means of improving this. Yet, in the Environmental Impact Statement for the NRA, the projected annual payroll is $12,637,736 for 3,272 people or some $3,862 per employee, hardly an annual salary likely to increase either weekly wages or per capita income.

Unemployment and cyclical employment are also the fruits of a tourist-based economy. For the high tourist counties in our sample, the average county experienced an unemployment rate of 7.74 percent in 1977, slightly higher than the figure for the average coal counties (7.34 percent). Within the tourist counties, the ownership of land by government, absentee individuals, and corporations (most of which are involved in resort development or forestry) is associated with unemployment, such that the greater the percent of a county owned by these interests, the higher the unemployment rate. High concentrations of ownership in these counties, usually caused by large blocks of federally owned land, shows an even stronger association, such that the greater the concentration of land ownership, the higher the unemployment in the recreation counties.[19]

Looking at particular recreation counties, Swain had an unemployment rate of 9.9 percent in 1977; Cumberland a rate of 10 percent in 1979. Watauga County usually has an unemployment rate higher than that of the state except in the summer months when it is lower due to increased recreational employment. The specter of under-employment, which is not indicated by these figures, is perhaps even more important. The low wages, cyclical employment, lack of high skill jobs, and high rates of participation in social assistance programs would lead us to believe that the rate of under-employment is quite high.

These conditions of unemployment and under-employment exist at the same time that the tourist-based industry brings with it a higher cost of living for area residents. Once again, Watauga serves as an excellent example: it has ranked 7th or higher out of North Carolina's 100 counties over the past several years in cost of living, while ranking as low as 79th in per capita income. The implications of such a situation for local residents should be obvious, particularly when accompanied by increased housing and land prices brought about by real estate speculation.

Associated Economic Development in Tourism Counties

The economic underdevelopment found in recreational areas also results from the character of secondary development which the tourism industry spawns. For not only are the jobs in the recreation industry menial and low-paying, so are those in the retail and services sectors that support it. Significant growth has occurred over the past several years in the retail and service components of counties such as Watauga. In Watauga, for instance, employment in the hotel and lodging segment of the economy is 6.4 times greater than that of the state as a whole. However, much of the employment in these sectors is both low-skill and low-wage, many jobs only paying minimum wage or less. Additionally, the wages paid in the trade and service sectors in Watauga were well behind those of the state (74 percent of the state average in trade and 84 percent in services). The picture rapidly becomes one of a low wage economy in a high cost environment.

The manufacturing sector in the recreational counties is critical to economic diversification. Generally speaking, it is difficult to associate the presence or absence of manufacturing facilities with the availability of land in these counties--on the whole land is not as tightly controlled as in the coal areas. There are exceptions, however, such as Swain County, which has a tourism and low-wage service industry base in which most of the population is employed in non-manufacturing jobs. The extensive public ownership in the county (80 percent) has apparently affected the availability of suitable land for industrial development, since most of the remaining level land in the county is within public boundaries, and thus unavailable for industry. An interviewee stated that graded land elsewhere in the county cost so much as to be prohibitive ($75,000 per acre).

Availability of reasonably priced land for housing could also pose a problem for attracting industrial development in recreational counties (See disucssion in Chapter on Land and Housing).

In another respect, the low wage levels and cyclical employment in the recreation industry make it possible for traditionally low wage manufacturing establishments in the area to remain so. In fact the presence of manufacturing establishments in these counties (associated positively with corporation ownership) does not seem to have a very positive effect on income levels. There is, for instance, a negative association between corporation ownership of land and per capita income, and a positive one between such ownership and the percent of families below the poverty line.[20] Thus, while there may be the impression of economic diversity in some recreational counties, it is a diversity based on low wages and unstable employment.

One other element affecting economic diversification in the coal counties also appears important in recreational ones--the availability of local capital. As mentioned in discussions in the coal section, local capital is necessary for the development of infrastructure, purchase of land, building of buildings, making loans, etc. The problem in the coal counties is that great amounts of locally-divided wealth are shipped elsewhere due to absentee control of resources. In recreation counties, the story is different. Absentee ownership seems to be associated with a lack of local capital altogether; in other words it seems to create little wealth to be expropriated.[21] Rather, the individual absentee ownership that is predominant in recreational counties is for purposes of either personal aesthetic enjoyment or speculation, neither of which create much local capital. Likewise, government ownership is unlikely to produce the kind of local capital conducive to non-recreational industrial and commercial development.

In sum, we find land ownership patterns contributing to one industry economies in both coal counties and recreational ones The appearance of economic diversification in the latter is deceptive, because the low-wage, seasonal employment created to service the recreational/tourism industry is overly dependent on the fluctuations of that industry. Whereas absentee corporate ownership is critical in the maintenance of a one-industry economy and economic underdevelopment in the coal counties, it is government ownership and the individual absentee ownership it encourages that seem to be most influential in the recreation counties. The results are similar in that industrial diversification is made more difficult by the lack of available land, inadequate local capital, and local tax revenue insufficient to provide an adequate services infrastructure. Thus, programs for economic development in these counties must take into account the impacts of prevailing ownership patterns.

The ownership patterns which have contributed to the economic underdevelopment of coal and recreational counties also impinge increasingly on agricultural counties. In the next chapter, we will examine the effects such patterns are having on agriculture, another important segment of both regional and local economies.

LAND OWNERSHIP AND ECONOMIC DEVELOPMENT

Footnotes

1. For a discussion of the failure to develop a mature economy in West Virginia and its roots in the early economic and political developments in the state during its industrialization, see John A. Williams. West Virginia and the Captains of Industry. Morgantown: West Virginia University Foundation, 1976.

2. Examples of this perspective may be seen in the following works: a) Helen Lewis, et. al, Colonialism in Modern America: The Appalachian Case. Boone, N.C.: Appalachian Consortium Press, 1978; b) Keith Dix, "Appalachia: Third World Pillage?" in Bruce Ergood and Bruce E. Kuhre, Appalachia: Social Context Past and Present, Dubuque, Iowa: Kendall/Hunt, 1976, pp. 167-172; and c) Emil Mazilia, "Economic Imperialism: An Interpretation of Appalachian Underdevelopment," in Ergood and Kuhre, pp. 162-176.

3. For a discussion of the transitions taking place during this time period, see Ronald D. Eller, "Industrialization and Social Change in Appalachia, 1880-1930: A Look at the Static Image," in Lewis, et. al., pp. 35-46. For an indepth case study of one area see John Gaventa, Power and Powerlessness in an Appalachian Valley, Urbana, Illinois. Illinois University Press, 1980.

4. For the 72 rural counties in the sample, corporate ownership of surface is associated (though not strongly) with the level of known coal reserves, such that the greater the reserves, the greater the corporate ownership (Pearson's R = .368 at the .0001 level of significance) and the greater the corporate ownership of mineral rights (Pearson's R = .369 at the .005 level of significance). Even within the major coal counties (i.e. those with the greatest reserves), corporate ownership increases with the level of coal production (Pearson's R = .437 at the .001 level) for surface ownership, and with the "value added" in mining (Pearson's R = .433 at the .036 level in the case of surface ownership and .468 at the .030 level in the case of mineral rights.)

5. For the 72 rural counties in the sample the relationship between the degree of corporate ownership of land and minerals and the percentage of the labor force in mining is significant (Pearson's R = .479 at the .0001 level of significance in the case of surface and .621 at the .0001 level in the case of mineral ownership.) This might be expected because we have already found corporate ownership to be associated with the level of coal reserves. However, even in the case of 37 counties with a high level of reserves, the relationship holds: corporate ownership means a heavy concentration of the labor force in mining (Pearson's R = .580 at the .0002 level in the case of surface ownership and .560 at the .001 level in the case of mineral ownership).

6. The association between absentee ownership and increased coal production is not a strong one in the case of all absentee (out-of-county and out-of-state) owners. (Pearson's R = .326 at the .052 level). However, it increases in strength when only out-of-state owners are considered (Pearson's R = .450 at the .006 level). This would lend support to the finding that the controllers of the coal production are located in metropolitan centers out of the region.

7. *Capital Resources in the Central Appalachian Region.* Appalachian Regional Commission Report No. 9. Washington, D.C.: Checci and Company, August 1969.

8. For documentation of the effects of boom town development, see, for instance, Helen Lewis and associates, "Coal Productivity and Community: The Impact of the National Energy Plan in the Eastern Coalfields" prepared for the Department of Energy, February 1978.

9. See the report for the U. S. Department of Energy. *Environmentally Based Siting Assessment for Synthetic Fuels Facilities*, January 1980.

10. For 37 coal counties, Pearson's R = .490 at the .002 level of significance.

11. For all absentee ownership, Pearson's R = .405 at the .013 level. For out of state ownership the level rose to .539 at the .001 level.

12. The association between out-of-state ownership of land in a county and the number of manufacturing establishments in 1972 is Pearson's R = .357 at the .030 level. In the case of value added in manufacturing, Pearson's R = .441 at the .013 level.

13. For corporate ownership, the Pearson's R correlation is -.453 at the .005 level. For out-of-state ownership it is-.486 at the .002 level of significanc .

14. For 44 counties for which data was available, Pearson's R correlation = .609 at the .0001 level of significance. The level of tourism development was measured as the percent of service industries in hotels, motels trailer parks, campgrounds, amusement and recreations, according to the 1972 Census of services.

15. Cary, William, et. al. *The Impact of Recreational Development*. Durham, North Carolina Public Interest Research Group, April, 1975.

16. See Anita Parlow, "The Land Development Rag", in Lewis, et. al., pp. 177-198 for a discussion of some of these studies.

17. This is the argument of Edgar Bingham, a professor at Emory and Henry College in southwestern Virginia, in his article, "The Impact of Recreational Development in Pioneer Life Styles in Southern Appalachia", in Lewis, et. al., p. 59.

18. As discussed in Parlow. op. cit., p. 190.

19. For 19 major tourist counties, the association between corporate and government ownership of land and level of unemployment (1977) is .472 at the .041 level of significance. For concentration of ownership (i.e. large amounts of land controlled by few owners) the strength of this relationship rises even further (Pearson's R = .580 at the .009 level using the Gini concentration coefficient.) Given the small number of counties in the sample, both of these relationships are significant.

20. For the 19 tourist counties, the Pearson's R correlation between degree of corporate ownership of land and per capital income (1974) is -.486 at the .035 level of significance. For percent of families below the poverty line (1969) the Pearson's correlation is .469 at the .043 level.

21. For instance, for the 19 tourist counties absentee ownership is negatively related both to total bank deposits (Pearson's R= -.496 at the .030 level and total time deposits (-.468 at the .043 level.)

CHAPTER V. LAND OWNERSHIP AND AGRICULTURE

The Decline of the Small Farm

Appalachia historically has been thought of as the land of the small farmer. Studies by the U. S. Department of Agriculture in 1930 concluded that the southern regions of Appalachia had the heaviest concentration of self-sufficient farms in the country.[1] Even today, what many Appalachians share is a closeness to the land, a familiarity with it and an attachment to it. Yet throughout this century, Appalachians have witnessed a constant assault on their land, resulting in the displacement of hundreds of thousands of small farmers and the disintegration of the culture and communities of farming.

Well over a million acres of farmland went out of agricultural production in the 80 counties of our study between 1969-1974, the latest years for which figures are available. Over 17,000 farmers left farming in this period--about 26 percent of the farming population of these counties. If these rates continued throughout the 1970's, the new Agricultural Census will show that in a single decade over half of Appalachia's farmers will have ceased farming and over a third of the region's farmland will have gone out of production.

The decline of the small farmer is, of course, a national phenomenon. In the late 1930's there were over 6,800,000 farmers in the United States, all but a few percent of them classified as family farms.[2] Today the number is 2,300,000 and still dropping. It is estimated that ten farmers a day leave the land. Total land in farms declined 2.35 million acres during 1979.

The reasons for the loss of over four million family farms in this country since 1930 are complex, and may vary in importance from region to region. The more significant factors appear to be the economic instability of small farms, the corporate intrusion into agriculture that has been aided and abetted by federal policies, and loss of land for agricultural use.[3]

At the heart of the small farm crisis lies the economic disadvantage of the small farmer. New style agriculture, with its intensive use of chemicals and machinery, requires a degree of capitalization which is often beyond the reach of small farmers. The small farmer feels the pinch from corporation "input" suppliers (machinery, feed, fertilizers, and seeds) and from the "output" corporations (the middlemen) that process, market and retail the farmers' product. In 1974, the farmer received only 41 cents out of each dollar the consumer spent on food. Only six percent of the rise in food prices between 1954-1974 went to the farmer.

Moreover, a high degree of actual farm production is coming into the hands of corporate interests. This has occurred primarily through contract farming, which soon may account for over 50 percent of America's food supply.

A number of governmental policies have worked to the advantage of corporate and large growers and have given impetus to the disappearance of the small farmer. The most important of these special advantages are (1) agricultural support programs which subsidize the corporate interest in agricultural production; (2) tax laws (e.g. inheritance taxes), which place family farmers at a competitive disadvantage because of the variety of income tax loopholes available to large corporate farm units and non-farm investors in farmland; (3) agricultural labor policies which work to the disadvantage of the small farmer; and (4) the research orientation of the USDA and the land grant colleges, an orientation that has helped to develop the highly mechanized, capital intensive pattern of production which has contributed in large part to the decline of the small farm.

Such factors, however, are not the only significant elements behind the farm crisis. As discussed in Chapter I, the loss of agricultural lands to non-farm owners has also been an issue of national importance. In Appalachia, too, this study finds that patterns of land ownership and use contribute to the lack of land for agriculture. In general, corporate, absentee and concentrated ownership patterns are each associated with a low use of the land for farming. Where such patterns are prevalent, or are newly emerging, agriculture competes with other land uses, especially energy and tourism development, bringing further pressure on the farmer. Combined with the other economic pressures on the small farm, patterns of land ownership and usemay both encourage existing farmers to give up farmland, as well as discourage or prevent new farmers from obtaining it for agricultural production.

To understand the current trends in Appalachian agriculture, and the role of corporate and absentee ownership, we must first understand the historical development of agriculture in the region.

History of Agriculture in Appalachia

Originally, settlers came to Appalachia to hunt, to fish, and to farm a little.[4] The soil was rich and settlers turned more and more to the raising of corn and livestock. Based on the Native American example, they used a primitive but productive style of agriculture--the slash and burn method. By the mid-nineteenth century, Appalachians had come to support themselves by means of subsistence agriculture, supplemented by an outside income raised first through hunting and lumbering and later by the sale of whiskey.

Corporate acquisitions by lumber and coal interests and the subsequent exploitation of coal and timber at the turn of the century limited the amount of land available to the Appalachian farmer. As a result, farmers were often left to farm land which they had never intended to use as their sole means of support. With this intrusion began the decline of mountain agriculture. In Wise County, Virginia, the site of the opening of the southwestern Virginia coalfields, there were in 1880, 1,145 farms covering 273,654 acres. By 1920 the number of farms had dropped only slightly to 1,067, but the land in farms had been dramatically reduced to a mere 72,877 acres, less than one-third the original area. The development of the National Forest, prompted by the tremendous devastation of the region's woodlands, later played a similar role in shaping the course of subsistence agriculture in the mountains. For example, in 1911 the initial purchase unit (Whitetop) of the Jefferson National Forest in southwest Virginia was 11,358 acres; by 1978 its holdings totaled 683,675 acres.

The loss of land for farming in Appalachia which began over a hundred years ago, continues through some of the same agents today. The timber industry and the coal industry have been expanding and consolidating their control over land in Appalachia. The expansion of federal government holdings, begun in the second decade of this century, and the recreational development usually associated with it, add further to the pressures on agricultural land.

**Beginning in the 1870's, the national need for lumber brought agents of timber corporations into Appalachia. They conducted title searches which often led to the Appalachian farmer being stripped of much of the land that had supported him. As Harry Caudill points out, the Appalachian subsistence farmer usually titled only the small portion of the land that he actually cultivated, and, as a result, lost to the timber companies the untitled land where he had hunted and fished.[5] Farming was made even more difficult by severe siltation and flooding problems from the timber industry's logging practices and its removal of the region's virgin timber.

**The development of the coal industry prior to the turn of the century led to the next major disruption of the land used by the subsistence farmer. The agents of the coal industry used a variety of maneuvers to cajole Appalachians to sell their mineral rights. The result, in Caudill's words, was that the Appalachian farmer came to be "...little more than a trespasser upon the soil beneath his feet."[6] Many subsistence farmers deserted their ancestral farms to take jobs in the coal camps, but a majority stayed behind to follow the same pattern of agricultural life. Dean Pierce describes what happened next:

> Those who remained on the land attempted to provide more food or whiskey to meet their own increased needs and the demands of the coal camps. The additional foodstuffs raised to sell to these camps led to the eventual and everlasting destruction of the soil. It was these increasing outside pressures that came to overstress the agricultural system and finally to destroy the fertility of all the soil. Moreover, the coal camps, through an unjust control of tax assessment, passed the tax burden back to the landowners, falling heavily upon the subsistence farmer, who could ill afford to pay for the area's desperately needed services.[7]

By the 1930's the Appalachian farmer had become so dependent on the coal industry's cash economy that he was totally unprepared when the depression forced him once again onto subsistence agriculture to support himself. In Alabama, small landholders across the state were often unable to pay even their low property taxes. As a result, from 1928 to 1933, over 2.6 million acres of land in the state were sold for taxes out of over 41 million acres of land that were tax delinquent. Eighty-four percent of the land that was sold for taxes was farmland. Much of that farmland was purchased by large land extensive corporations, primarily timber companies.[8]

Those who had left their farms to become miners fared little better. In 1932, a survey of 956 unemployed miners in Kentucky and West Virginia found that only 11 percent wanted to return to mining, while 48 percent wanted to return to farming. However, by now the return to farming was blocked, for the miners no longer owned the land. Malcolm Ross, a New York Times writer, wrote in 1933 about miners who "would desire to return to cultivation of the land; the trouble is they no longer have any claim to it. The coal companies own the land."[9]

Historically, the Appalachian small farmers have clung to and fought for their land against very difficult circumstances. They continue to lose the battle.

Land Ownership and Agriculture in Appalachia Today

Today, Appalachian farmers have much in common with small farmers elsewhere They suffer from the same governmental neglect, financial instability, and corporate dominance that plague small famers throughout the country. Yet there are some obvious differences. The Appalachian farmer tends to be older, less educated and poorer. The average farm in Appalachia is smaller, and the uneven topography results in the division of available cropland into such small and scattered fields that efficient use of machinery is at times impossible.[10] The pressures on farmland from energy development, tourism and federal acquisitions pose special problems for Appalachian farmers.

One clue to the reason for farmland loss in Appalachia is found in Table 1.

The greatest loss of farms in the survey counties was in Kentucky and North Caroli . The greatest loss of farm acreage was in Kentucky, West Virginia, and North Carolina. These states are also the ones in which coal or recreation developments have been greatest. In fact, all but one of the counties in the sample which lost 30 percent or more of their farms between 1969-74 were significantly affected by tourist and second home development or by coal production. (See Tables 3 and 4, pp. 135 & 139.

TABLE V-1: Loss of Farms and Farmland in 80 Appalachian Counties

1969-1974

	# FARMS	% FARMS	# ACRES	% ACRES
ALABAMA	5,696	25.3%	442,578	17.4%
KENTUCKY	1,406	31.4%	118,531	27.3%
NORTH CAROLINA	3,680	31.3%	205,056	22.2%
TENNESSEE	1,686	20.4%	163,388	15.2%
VIRGINIA	3,183	22.8%	182,255	11.5%
WEST VIRGINIA	1,366	26.4%	219,380	23.9%

What are the land-related mechanisms encouraging this loss?

Coal development in agricultural areas, especially strip mining, frequently destroys the land for subsequent farming, through acid mine drainage and flooding. The absentee corporate ownership associated with coal development limits future agricultural use of the land, since mineral lands are usually held for long-term speculative development. In the traditional coal counties, the barriers to housing and commercial development posed by corporate and absentee landholding in many areas have led to urban sprawl along the narrow river bottom land that is the major farmland in such areas. When large blocks of land are taken out of the housing market, farmland is often converted to residential development. Even a predominantly rural state like Kentucky lost 123,181 acres of prime farmland to urban sprawl from 1969 to 1979. While much of this loss was in areas surrounding the urban areas of central and northern Kentucky, Pike County, in the heart of the eastern Kentucky coalfields, was among the top counties in the state in terms of such loss.

Federal and state ownership, with its associated recreational development, has placed undue pressures on farmland in western North Carolina, southwestern Virginia, and elsewhere. When these acquisitions are accompanied by corporate purchases of vast acreages for purposes of building pump storage facilities and other dams to produce electricity, the loss of farmland can be significant. In areas where these ownership patterns are found in combination, land speculation can lead to a rapid escalation in prices for farmland, making either the retention or expansion of farmland more difficult. Mr. G. Halsey of the Grayson County (Virginia) Agricultural Stabilization and Soil Conservation Office provides an excellent example of the resulting price spirals.

> Grayson Highlands State Park, Mount Rogers National Recreation Area, and APCO all three buying land in the county at the same time caused the price of land to get higher. County-wide, land is now selling for $600-700 per acre, which is probably triple in price since the 1960's.

It is not surprising that the Appalachian farmer is older than average, when spiralling land prices have made it next to impossible for new or young farmers to begin farming. If an individual has not inherited a piece of land, the initial investment for land and operating equipment can be close to $400,000.

The striking loss of over a million acres of farmland with over 17,000 farmers in our sample counties of Appalachia between 1969 and 1974, is in part connected with the reasons for the national decline in agriculture during this period. Our study also suggests that the land ownership and land use pressures discussed above contribute to the decline of farmland in the region. In general, our study found a significant correlation between absentee and corporate control of land and the use of land for farming. And we found that two developments in particular, energy and recreation development, have had major impacts on the loss of farmland.

Agriculture and Land Ownership: The General Pattern

Indicators of a decline in the agricultural economy of the region include loss of acreage and farms, a low percentage of the land in rural counties devoted to agriculture, farmers having to gain their income from other, nonfarm, employment, and the increasing average age of farmers--suggesting that new and young farmers are not getting a start in the business. The historical development of agriculture in Appalachia suggests that we should expect corporate and absentee ownership of the land to be associated with these indicators, in turn implying that these land ownership patterns act as a barrier to the agricultural economy. Correlations made in 72 rural counties of our sample show that this is indeed the case.[11]

In Appalachia, corporate control of agricultural land does not seem to lead to agribusiness--corporate agricultural production--as it does elsewhere in the country. Here the reverse seems to be true: corporate ownership takes land out of agriculture altogether. In our survey counties, the greater the corporate control of land, the lower the percentage of land devoted to agriculture.[12] Of the 31 rural counties with a higher than average amount of land in agriculture, 87 percent have a below average level of corporate ownership. Of the 26 counties with a high level of corporate ownership, on the other hand, only 4 also have a high degree of the county devoted to agriculture.

Absentee ownership of land is also associated with low use of land for farming, as is concentration of ownership (greater acres in fewer hands). These associations suggest that where land ownership becomes concentrated in a few corporate and absentee hands, it may be valued for reasons other than its farm potential (e.g. energy development, mineral and timber resources, recreation).[13] Farming of that land, even while it lies idle, will be discouraged. Indeed, we found that the less the local individual ownership, the less the use of land for farming and the lower the value of agricultural sales in a county.[14] This is illustrated in Table 2 A & B. Of 38 counties with a relatively high level of land not owned by local individuals, 74% had a lower level of agricultural use in the county and 76% had a low level of agricultural sales. On the other hand, of 34 counties with a higher proportion of land owned by local individuals, 62% had a high level of farmland and 62% had a high level of agricultural sales.

When large blocks of land are essentially taken out of local use because of their ownership patterns, we may expect the consequent pressure on remaining agricultural land to be great. Housing and economic development uses compete with small farmers for the use of the remaining blocks of available land, and both the consequent price spiral and related property tax pressures exacerbate the problems for family farms (see Chapter III on tax problems).

Where farmers are unable to expand or improve their farms by acquiring more land because of high prices or unavailability of land, and where taxes are high, we may expect that farmers will have to turn to other occupations to supplement their farm income. We may expect such a pattern to emerge more clearly in those

TABLE 2A : Percent of County Not Owned by Local Individuals BY Percent of County in Agriculture

		Percent of County in Agriculture		
	*Number of counties. **Row percent. ***Column percent.	lo (Less than 25%)	hi (25% or Greater)	TOTAL
Percent of County Not Owned by Local Individuals	lo (Less than 40%)	13* (38%)** (32%)***	21 (62%) (68%)	47%
	hi (40% or Greater)	28 (74%) (68%)	10 (26%) (32%)	53%
	TOTAL	57%	43%	100%

Pearson's R. Correlation= -.462 at the .0001 level of probability.

TABLE 2B : Percent of County Not Owned by Local Individuals BY Level of Agricultural Sales

		Level of Agricultural Sales		
	*Number of counties. **Row percent. ***Column percent.	lo (Less than $5 million)	hi ($5 million or greater)	TOTAL
Percent of County Not Owned by Local Individuals	lo (Less than 40%)	13* (38%)** (31%)***	21 (62%) (70%)	47%
	hi (40% or Greater)	29 (76%) (69%)	9 (24%) (30%)	53%
	TOTAL	58%	42%	100%

Pearson's R Correlation= -.437 at the .0002 level of probability.

areas where farming is still practiced than in those areas where it has been virtually eliminated already. In the average county of our sample, 55 percent of the farmers gained more income away from the farm than on it. In the high agriculture counties, fewer farmers held other jobs. But within those high agriculture counties, there is a correlation between degree of absentee corporation and government ownership and the proportion of farmers with other jobs. The greater the absentee corporations and government ownership, and the greater the concentration of land in a few hands, the greater the percentage of farmers with other major occupations.[15] For instance, of thirteen agriculture counties in the sample with a higher than average level of concentration, twelve of them also had above average percentage of farmers with other jobs.

In our general sample, some significant relationships have been found between land ownership patterns and the structure of agriculture. Such relationships emerge even more strongly when we look at two particular types of counties: those in which recreation and tourism are placing increasing pressure on the land, and those in which energy development is taking place.

Agriculture and Land Ownership: Tourism Counties

Traditionally, agriculture has played a significant role in the economies of most of the counties which we class as recreational. It continues to contribute substantially to these counties' cash receipts--in 1976, in the twelve counties of our study in western North Carolina, for example, cash receipts generated by agriculture amounted to $105,852,000. But the dynamics of tourism development threaten the continuation of agriculture as an integral part of many local economies. In particular, the pressure on farmland created by second home development and resorts may destroy what was once the most stable element in a diversified local economy.

Case studies illustrate the trend. In Swain County (North Carolina) for example, 26.2 percent of the county's land was in farms in 1939 (even after the federal government had made its major acquisitions for the Great Smokey Mountains National Park and the Cherokee reservation). These and subsequent federal acquisitions in the county have created a situation in which over 80 percent of the land is owned by the federal government. As in the case of many other western North Carolina counties, this ownership has spurred the purchase of second homes and recreational development. The combined effects have led to a dramatic decline in farmland in Swain County such that by 1974, only 2.8 percent of the land was in farms. According to one local resident:

> There really hasn't been a young person getting into farming lately because of high land prices and outside pressure of people coming in from outside the county and who are willing to pay a high price for it (the land). This has taken good land out of agricultural use and out of production.

In the five year period from 1969 to 1974, the most recent for which data are available, high losses of farmland were recorded for many of the recreation counties we studied (see Table 3).

For most of these recreation counties, farmland loss was considerably higher than for the average county in our sample. Indeed, in three North Carolina counties (Jackson, Mitchell and Clay) around twice the average farmland loss occurred. Recreation counties in West Virginia and Virginia were not far behind. In the eight North Carolina counties alone, almost 150,000 acres of farmland were lost in just five years, and over 2,700 farms--more than a third of the farms in these counties.

TABLE V-3 Tourism/Second Home Counties with High Loss of Farmland, 1969-74

COUNTY	STATE	Percent Loss in # Farms	Percent Loss In Acres Farms	# Loss in Acres in Farms	Percen Touris Services[1]
Swain	North Carolina	46.9	27.4	3,700	85.5
Jackson	North Carolina	40.3	41.6	15,175	43.3
Mitchell	North Carolina	36.9	32.3	17,308	N/A[2]
Clay	North Carolina	36.5	35.3	10,727	N/A
Randolph	West Virginia	36.5	25.6	46,442	24.5
Ashe	North Carolina	35.9	19.2	33,010	12.5[3]
Avery	North Carolina	35.8	24.9	10,352	54.6
Cumberland	Tennessee	34.3	14.3	15,820	37.4
Watauga	North Carolina	30.3	16.2	12,338	64.0
Madison	North Carolina	30.1	27.9	46,117	N/A

1. Percent of service receipts in the county based on hotels, motels, trailer parks, camp grounds, amusement and recreation (based on 1972 Census of Services)

2. While data is not available for these counties, it is known from other sources that these counties are strong in tourism and second home developments.

3. While the tourism industry is not as high in Ashe County, other data indicate the number of second home purchases to be high.

Land ownership patterns have played a major role in this declining agricultural economy in the tourist counties. Second home and resort development create land speculation and a price escalation which puts land prices far above what the local market can bear. Land values in relatively undeveloped agricultural townships of Watauga County (North Carolina), for example, increased an average of 225 percent in the twelve year period from 1963 to 1975. Ross Payne, a local real estate agent in Cumberland County (Tennessee) said that the general price of land has gone from $100 per acre, the price of land when he first came to the county fifteen years ago, to around $1,000 per acre now.

High land prices affect agriculture in several ways: They may tempt people to sell, and thereby put land out of agricultural use. They act as a barrier to expansion of farms or to new farmers entering the occupation (unless they have been fortunate enough to inherit a plot of land). Property taxes soar to meet new services demanded by the tourist economy. The increasing property tax burden, especially hard in those counties where much of the land is taken out of the local tax base by public and non-profit ownership, increases the economic problems of "making it" in farming which already exist at a national level.

These arguments about the importance of land ownership patterns can be substantiated by several correlations made in our study. In these recreational counties, it is absentee and public ownership of land that has the major impact on farming. In many of the recreational counties, federal government ownership of land increases the pressure on and competition for already scarce land. Of the 19 tourist counties, 12 have a high degree of public ownership. The average tourist county has 14.2 percent of its land in public ownership, almost double the average for non-tourist areas of our sample. Of the remaining land in the county, out-of-state individuals own an average of 17.5 percent of the surface, compared with 12.2 percent in non-tourist areas. Altogether, 14 of the 19 tourist counties (74 percent) have a high degree of absentee ownership.

The correlations which exist for our sample generally between the degree of absentee, corporation and government ownership and the lack of land in agriculture in a county are even stronger in the high tourism counties.[16]

Within the tourist counties we also find associations between these land ownership patterns and other indicators of a farm crisis--such as farmers turning to other jobs, and increasing age of working farmers.

We might expect that where farmland is being lost and farms are disappearing, farmers will not be able to maintain the economic viability of their operations. Not only will individuals cease to be farmers altogether, but also individuals who continue to farm will have to turn to other, nonfarm jobs, in order to supplement their farm incomes. Within the recreational counties, we find more farmers turning to other occupations than in the agricultural counties of our sample (although to a lesser extent than in coal counties). Within the tourist counties in particular, we find that the percentage of farmers taking other jobs is associated both with the degree of public ownership of land, and the combination of corporate and public land ownership levels. Of the eleven tourist counties with a high level of combined absentee, corporate and government ownership of their land (that is with a lower than average level of local ownership), nine (92 percent) also have a higher than average number of farmers in other jobs.[17]

The pressures on the farm economy created by land ownership patterns--land scarcity and high land prices in particular--limit the economic viability of farming in recreational counties. This not only increases the likelihood that people currently farming will seek other employment; but also diminishes the likelihood of new people entering farming. While the reasons that fewer people are choosing agriculture as a career option are quite complex, our study indicates that the scarcity of reasonably priced land may be a factor in the recreational counties. In those counties there is a strong correlation between the percent increase in average age of farmers (1969 to 1974), and the degree of public ownership of land in the county, as well as the degree of absentee concentrated ownership (such that fewer people hold greater amounts).[18]

What appears to be occurring today in the recreation areas of Appalachia is a process similar to that which occurred decades ago in the Central Appalachian coalfields. There, with the development of an energy industry, the people were displaced from their land and turned into the miners needed for industrialization. Today in recreation and agricultural areas, people are also being displaced, often to provide cheap labor for industries in the process of again industrializing the region, or for support services necessary for recreational development.

Agriculture and Land Ownership: Energy Counties

It is clear from the history of agriculture in the region that coal development has had a negative impact on farming. What our study reveals is that these effects on agriculture are not only historically true but are continuing today.

In the sample counties generally, the greater the level of coal production, the less the number of farms in a county; the less the farm acreage in a county, and the smaller the proportion of the county in agricultural use.[19] In analyzing the mechanisms of this impact, and the role of land ownership patterns in explaining it, it is useful to look at two groups of counties: those which are already major coal producing counties, and have been so for many years, and those which are currently more agricultural in their economic base, but which are currently facing coal development.

Major Coal Counties

Most of the major coal counties are in the Central Appalachian region, and much of their land was removed from agricultural production long ago. The 1974 agricultural census, for example, lists only one farm in Mingo County, West Virginia. But to say that farming is no longer predominant in these counties is not to discount its significance. The small farm plot has provided important security for miners in times of coal bust, for the elderly and unemployed, or for those working in lower-paying jobs.

While the development of the coal industry took its toll on agriculture years ago in these counties, there has continued to be a loss of farmland even into recent years. This suggests that the last thread of independent economic security for residents in major coal counties is finally being eroded. Table IV provides the coal producing counties in the sample, in which loss of farmland between 1969-74 has been the most dramatic. The average coal county lost almost 30 percent of its farmland in this period, double the rate in still agricultural counties. Only 18 percent of the land in these counties is now in agricultural use, about half the proportion in non-coal counties of our sample.

The contribution of land ownership patterns to the decline of agriculture in these coal counties is suggested by correlations we found between corporate and absentee ownership of land, especially of minerals, and indicators of agricultural decline.

The greater the corporate control of mineral rights in these coal counties the greater the loss of farms between 1969 and 1974. The correlation increases in strength when corporate control of both surface and mineral rights is combined into an Index of Resource Control.[20]

Among the coal counties, corporate ownership of the land is associated with lower agricultural use of land. Of 42 major coal counties, only eleven (26 percent) had a high level of land in agricultural use. Of these counties nine (82 percent) had a low level of corporate control.[21]

The situation in Harlan County, Kentucky, provides a good example of what is happening to farming in the coal counties. In Harlan County, only 2 percent of the land is now used for farming--some 6,600 acres. Only 46 farmers were listed in the 1974 agricultural census as farming this land. Thirty-eight of these had an annual income of less than $2,500, and 22 of them had an income of less than $1,000. Only fifteen farmed full-time. Twenty-five were at or near retirement age. Case studies from

TABLE V-4 Coal Counties with High Loss of Farmland, 1969-74

COUNTY	STATE	Percent Loss in # Farms	Percent Loss in Acres Farm	# Loss in Acres in Farms	Production
Knott	Kentucky	79.6%	67.6%	9,174	4,321,000
Dickenson	Virginia	60.8	49.4	10,282	5,299,000
Buchanan	Virginia	59.8	62.1	16,382	15,804,000
Perry	Kentucky	57.6	48.1	5,350	7,473,000
Martin	Kentucky	54.0	32.6	1,986	8,160,000
Logan	West Virginia	51.2	49.2	2,289	8,612,000
Floyd	Kentucky	45.5	42.2	13,821	4,562,000
Johnson	Kentucky	45.1	40.3	20,667	3,810,000
Wise	Virginia	44.1	40.2	8,757	12,290,000
Pike	Kentucky	40.9	35.3	7,097	19,002,000
Letcher	Kentucky	39.8	56.1	5,792	4,126,000
Lincoln	West Virginia	39.7	31.8	17,301	172,000 *
Raleigh	West Virginia	39.0	34.5	16,157	6,828,000
Knox	Kentucky	33.2	.8.5	5,998	1,112,000
Breathitt	Kentucky	31.8	35.8	30,451	6,373,000
Anderson	Tennessee	30.9	26.1	14,928	1,660,000

* Of these, Lincoln County is the only one without over 1 million tons of coal produced. However, land and minerals are tightly controlled by energy companies, and have been subject to heavy leasing, as the Lincoln County case study shows.

major coal counties document the problems farmers face in holding onto their land, and making a living from it. Little land is still available for agriculture use, and what there is may be threatened by the effects of mining. Unchecked strip mining disturbs the land, fills creeks with silt which encourages flooding, and creates acid drainage which ruins the land it floods for future crops. Seventy-five percent of Cranks Creek in Harlan County is estimated to have been disturbed by strip mining. What this means for local residents is that the creek is silted up, and most of the land below the strip job is ruined. Becky Simpson, a Cranks Creek resident, says "Folks can't farm anymore, because they clay mud has washed over the soil; the land no longer absorbs water."[22]

Agricultural Counties Being Developed For Coal

On the fringes of the traditional coalfields, especially in southern Tennessee and northern Alabama, there are counties in our survey where agriculture has been the traditional economic base, but minerals are present and their exploitation is beginning to occur. In these counties, corporate and absentee ownership of minerals are coming into increasing conflict with local farmers' use of the surface land. A representative of the Dekalb County (Alabama) Soil Conservation Service says that the dramatic increase in strip mining for coal over the past ten years has taken a great deal of farmland out of production in some areas of that county. In Dekalb County, farmers have reportedly gotten together at times to buy land as a measure to prevent its purchase by absentee interests.

In the southern Tennessee counties which are now being exploited for their coal, there were several court decisions in the mid 1970's which backed the right of mineral owners to strip mine land without the consent of the surface owners. In response, the state representative from one of the affected counties, White County, with the citizen's group Save Our Cumberland Mountains, pushed a bill through the state legislature in 1977 to force mineral owners to gain the consent of surface owners before mining. Though the law was challenged, it has recently been upheld by the Tennessee Supreme Court.

Strip mining of land is the most obvious instance where coal development may act as a barrier to agricultural use of the land. Other effects of corporate and absentee control of land and minerals, especially the price spiral, may also have adverse effects on agriculture. For instance, Gary Kobylski, of the Walker County (Alabama) Soil Conservation Service estimates that the lowest selling price for farmland in that county is around $1,000 per acre, although some companies have offered farmers as much as $5,000 an acre. This price escalation occurs in a county where concentration of land ownership by the coal industry has taken up to 20,000 acres of farmland out of crop production. A new regulation to preserve agricultural land by prohibiting mining of any land which has been planted in crops for five of the last ten years seems only to have encouraged speculation. Companies simply purchase the land and keep it out of production for five years.

In the agricultural counties of our sample there is a strong negative correlation between corporate and absentee control of mineral rights and the percentage of the county used for farming. This correlation is even stronger for the Index of Resource Control, combining surface and mineral ownership.[23] In these counties, corporate and absentee land ownership patterns are associated with a lowered agricultural use of land.

Where there is a high degree of corporate ownership of land, and especially of mineral rights, there is also a high proportion of farmers who turn to other jobs to supplement their farm incomes. Since this land is taken out of the local market, either by price or by unwillingness to sell, and since the actual exploitation of coal under this land involves the destruction of the surface, farmers cannot expand their acreage to increase production efficiency, and new farmers cannot easily get a start in the occupation.[24]

The impact of coal development in these agricultural counties is only beginning: as more minerals are bought up, and as they begin to be exploited, we can expect that agriculture will be more widely impacted. We may expect to find patterns developing in these counties which are now more clearly apparent in the "old coal" counties--a decrease in the use of land for farming, an aging farm population, a barrier to young people getting a start, an increasing pressure to turn to other jobs as a source of income.

It may be suggested that the move from an agricultural economy to a coal economy is not necessarily a bad thing for the residents of the region. However, there is evidence that a decline in agriculture is associated with economic disadvantages for local residents.

Loss of Farmland: The Economic Impacts

In our sample counties, the agricultural counties seem to be economically better off than the coal counties, despite the great wealth of natural resources which exists in the latter. In our Virginia sample, for instance, the median family income in the coalfield counties is only 63 percent of the state average, while in the agricultural counties it is over 70 percent of the state average. The coalfield counties also have a higher proportion of families living at or below the poverty level than do the agricultural counties. The reasons become clear from case study examples. Agriculture has in many cases provided a cushion against less stable sectors of the economy (whether coal with its boom and bust cycles, or tourism). In Walker County, Alabama, agriculture is given credit by local authorities for carrying the county through the coal bust of the 1950's, when almost all the 7,000 jobs in the coal industry in the county were lost. Agriculture is still a significant sector of the economy in Walker County (employing 22 percent of the workforce, compared with the 24 percent employed in the coal industry). A balanced and diversified local economy, like Walker County's, has a greater chance of surviving economic hardships unscathed than the one-industry economy found in many other counties of our study.

Other case studies illustrate the economic advantages of a significant agricultural base. Dekalb County (Alabama), a predominantly small farm county with a well-distributed land ownership pattern, had an unemployment rate of only 5.8 percent in 1979, compared with the state average of 7.1 percent. In Shelby County (Alabama), for all income indicators of economic health, the farm population was possibly better off than the non-farm population.[25] Of the 1,960 farm adults recording income in Henderson County (North Carolina) in 1979, 59 percent or 1,166 had incomes in excess of $20,000. Another 26 percent made between $2,500 and $20,000.

The effects of agricultural decline can be seen in Grayson County, Virginia. In 1950, when agriculture was still a dominant part of the county's economy, and 44 percent of the workforce was employed in farming, the average weekly wage was 83 percent of the state average. By 1977, when only 16 percent of the county's workforce was employed in agriculture, and the county's economic base had changed to small-scale manufacturing, the average weekly wage was only 58 percent of the state average. The proposed federal and state developments that will lead to a tourist and recreation based economy in the county, with its low wages and seasonal employment, is unlikely to improve this ratio.

Even in counties where agriculture continues as a significant portion of the local economy, the impact of land ownership patterns may be to make it less diversified and stable, less of an effective cushion against economic depression, than in the past. For instance, production may become focused on crops that will yield a relatively large cash income on small areas of land. In western North Carolina this has meant ornamental shrubbery and Christmas trees; in parts of Alabama this has meant poultry; in other areas it means tobacco. Robert Thornton, the county extension agent in Walker County (Alabama), attributes the development of the broiler industry in that county to the lack of availability of land and the high price of land. Any of these limited (one-crop) farm enterprises are vulnerable to economic changes in ways that a diversified food crop agriculture may not be.

Several studies in other areas of the country have discovered a clear and direct relationship between small farms and a high level of social and economic development in small rural communities. The most important of these studies reported that as compared to a community surrounded by large farms, a small farm community had twice as many businesses, 61 percent more retail trade and three times as many household and building supply purchases. It supported more people per dollar of agricultural production,had a better average standard of living, a much greater proportion of independent businessmen and white collar workers, more and better schools, and twice as many civic organizations, churches and means of community decision-making.[26] While drawing exact parallels between communities analyzed in the above study and rural Appalachian communities may be risky, such findings should prompt serious consideration of the positive effects of small farm agriculture.

There are also other arguments which attest to the viability (even desirability) of a small-farm-based agriculture and would support whatever efforts are necessary to prevent the loss of small farms in Appalachia. The ecological argument suggests that the farming practices utilized on small farms are more ecologically sound than those on large farms. The efficiency argument maintains that the small farm can be just as or more efficient than the large farm. Even the Ralston Purina Company, with long experience as a corporate farmer, admits that the family farmer "can meet and many times surpass the efficiency of large units that operate with hired management."[27] The political argument for small-farm-based agriculture suggests that political democracy is impossible without economic democracy and that the latter is enhanced by a diversified system of agriculture based on the widely dispersed ownership patterns typical of small farm agriculture.[28]

While the economic and social advantages of small farm agriculture are clear, policy strategies to promote it are rare. For example, the Wythe County (Virginia) Comprehensive Plan views agriculture as an important component in a diversified economy. Yet, while the Plan seeks to "promote" industrialization, it seeks only to "protect" agriculture. For regional policy-makers, the small farm has been largely ignored, as "inefficient." The Appalachian Regional Commission has almost no programs directed toward small farmers. Nevertheless, the economic and social advantages of the small farm in the local economy must be recognized, as well as the other arguments in favor of the small farm.

Land is important historically and culturally to Appalachian people. It has been in the past, as Gladys Maynard of Martin County (Kentucky) puts it, "the people's survival kit." Economically, it has provided cash to counter the low wages and marginal employment often found in their rural communities, and it has offered some security against boom and bust industries. Appalachians have struggled to preserve their land, their values and their lives as they know them. Our study shows that they are losing this struggle, in part due to the nature of land ownership in the mountains today.

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Footnotes

1. Cited in Cynthia Guyer, Land Ownership and Inequality in Appalachia (Thesis, Oakes College, 1975) p. 77.

2. U. S. Department of Agriculture, ESCA, Status of the Family Farm: Second Annual Report to Congress, Agricultural Economic Report 434 (Washington, GPO, 1979) p.2

3. The literature analyzing these factors is summarized in Steve Fisher and Mary Harnish, "Losing A Bit of Ourselves: The Decline of the Small Farmer," paper presented at the third annual meeting of the Appalachian Studies Conference, Johnson City, TN, March 22, 1980.

4. Much of this analysis is taken from Dean Pierce, "The Low-Income Farmer: A Reassessment," Social Work in Appalachia 3 (1971), 7-10. Pierce offers a good, concise summary of the historical development of agriculture in Appalachia. He relies heavily upon the analyses by Harry Caudill, Night Comes to the Cumberlands (Boston: Atlantic-Little Brown, 1962) and Anthony Caruso, The Appalachian Frontier (Indianapolis: Bobbs-Merrill, 1959).

5. Caudill, pp. 61-65, 71.

6. Ibid., pp. 74-76.

7. Pierce, p. 8.

8. See Alabama State Report.

9. Malcolm Ross, Machine Age in the Hills (MacMillan, New York, 1933), p. 84.

10. Roy E. Proctor and T. Kelly White, "Agriculture: A Reassessment." in Thomas R. Ford, editor, The Southern Appalachian Region: A Survey. (Lexington: University of Kentucky Press, 1962) p. 87.

11. Unless otherwise indicated, agricultural data used in these correlations is based upon the 1974 Census of Agriculture. Recognition is given to the possible difficulties of correlating ownership in 1978-79to these agricultural traits.

12. In the 72 rural counties in the sample, the association between percent of a county corporately owned and the percent of land in agriculture is significant: Pearson's R= -.498 at the .0001 level. The relationship increases in strength when both corporate and public land are included, rising to Pearson's R = -.519 at the .0001 level. Outside of the coalfields, 68% of the counties studied have a high degree of agricultural land use, and all of these have a low degree of corporate control. For 22 counties outside the coalfields, the Pearson's R correlation between percent of county held by corporations and government and the degree of agricultural land use is -.622, at the .002 level of probability.

13. The correlation (Pearson's R) between the percent of a county absentee owned (i.e. by out of state and out of county owners), and the percent of land used for agriculture is -.429 at the .0002 level of probability. For non coal counties, the negative relationship strengthens to -.666 at the .0007 level.

14. The greater the concentration of land the less the percent of the county used for agriculture. The correlation (Pearson's R) between the Gini coefficient and percent of county in agriculture is -.499 at the .0001 level of probability.

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15. For the 30 high agricultural counties for which data was available, the percent of farmers with other occupations as a principal income source correlates strongly with several land ownership patterns, as follows:

% of county absentee held : Pearson's R = .380 at the .038 level of probability.
% of county in corporate and government ownership = -.451 at the .012 level of probability.
% of county in absentee corporations and government ownership = .517 at the .003 level of probability.
Concentration (Gini Coefficient), Pearson's R= .723 at the .0001 level of probability.

16. Below are the correlations between ownership patterns and agricultural land use patterns for the tourism counties and for the 72 rural counties in the sample.

Correlations (Pearson's R) between Land Ownership Patterns and Agricultural Land Use in 19 Tourist Counties and in the 72 Rural Counties Sampled

	# FARMS		ACRES IN FARMS		% COUNTY IN FARMS	
	Tour.	All	Tour.	All	Tour.	All
Corporate and Government	-.546 (.016)	-.465 (.0001)	-.533 (.019)	-.503 (.0001)	-.616 (.005)	-.519 (.0001)
Absentee	-.540 (.017)	-.391 (.0001)	-.544 (.016)	-.405 (.0005)	-.574 (.010)	-.429 (.0002)
Corporate + Government + Absentee	-.595 (.007)	-.437 (.0002)	-.581 (.009)	-.441 (.0001)	-.640 (.003)	-.462 (.0001)
Concentration: S. Gini	-.436 (.062	-.242 (.045)	-.364 (.125)	-.299 (.012)	-.534 (.019)	-.499 (.0001)

17. For the 19 tourist counties in the sample,the greater the percent of a county in government ownership, the greater the percent of farmers with other occupations as principal income source (Pearson's R: -.597 at the .009 level of significance). For corporate and government ownership combined, the relationship increases in strength. (Pearson's R= .706 at the .0007 level.)

18. The relationships here are very high, especially for such a small number of counties (n=19). For government ownership, Pearson's R= .817 at the .0001 level, for absentee ownership, Pearson's R= .734 at the .0003 level, and for concentration, Pearson's R= .603 at the .006 level, using the Gini coefficient, and .846 at the .0001 level, using the concentration index (see methodology section for description).

19. Coal production is based on 1977 data. For the 72 rural counties in the sample, Pearson's R is as follows: The greater the level of coal production, the less the number of farms in a county (-.398 at the .002 level), the less the farm acreage (-.441 at the .0004 level), and the lower the percentage of the county

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17. (Continued) in agricultural use (-.540 at the .0001 level).

18. For 31 counties for which data was available, the Pearson's R correlation between the corporate control of mineral rights(expressed as percent of county surface) and the loss in number of farmers between 1969-1974 is strong: .504 at the .004 level of probability. For corporate control of mineral and surface combined (Index of Resource Control) it is .533 at the .002 level.

19. Pearson's R= -.525 at the .001 level of probability.

20. See Harlan County Case Study.

21. Correlations (Pearson's R) of corporate and absentee ownership of surface and mineral lands with percentage of county in agriculture--for 33 agricultural counties.

	Surface Rights (30 counties)	Mineral Rights (22 counties)	Surface and Mineral (22 counties)
% Corporate	-.472 (.008)	-.576 (.005	-.665 (.0007)
% Absentee	-.403 (.027)	-.527 (.010)	-.656 (.0007)
% Corporate + Absentee + Government (i.e. not local individuals)	-.452 (.012)	-.557 (.006)	-.705 (.0002)

22. Correlations (Pearson's R) of ownership patterns with percent of farmers with other occupations--for 33 agricultural counties.

	% Surface Acres (30 counties)	% Mineral Acres (22 counties)	% Surface + Mineral (22 counties)
% Corporate	.450 (.012)	.524 (.012)	.577 (.005)

23. Comparison of economic health between farm and non-farm populations in Shelby County, Alabama.

Median family income	$ 8,706	$ 6,986
Mean family income	11,853	7,832
Per capita income	3,127	2,181
% familes below poverty level	11.1%	19.5%
% of all persons below poverty level	12.5%	23.2%

Source: 1970 Census. Given the increased residential development in Shelby County and the continuing pressures on the most productive farmland in the county, it is possible that the 1980 census will show significant changes in these indicators.

24. Walter Goldschmidt, As You Sow: Three Studies in the Social Consequences of Agribusiness (Glencoe, IL: Free Press, 1947; Montclair, NJ: Allanheld, Osmun & Co., 1978), pp. 3-451. For a discussion of other studies of these impacts, see particularly the introductory section, "Agriculture and the Social Order," pp. xxiii-liv in the Allanheld, Osmun edition.

25. Quoted in Jim Hightower, Eat Your Heart Out: Food Profiteering in America (New York: Vintage Books, 1976), p. 158.

26. For further information on these arguments, see Fisher and Harnish, pp. 11-14.

CHAPTER VI. LAND OWNERSHIP AND HOUSING

> If you can't have homes and everything is choked to death, how is anything going to grow? We got the people, if we had something to build with we could go on.
>
> --a lifelong resident of Mingo County, West Virginia

Housing in Appalachia has long been recognized as a national disgrace. In 1970,in the region as a whole, one out of every five homes were considered substandard. In Central Appalachia, the figure rose to one in every three homes. Of the 72 rural counties in this study, the average county had 30% of all homes lacking some plumbing, 13% considered overcrowded, and almost 60% built before 1950. For people living in the region, these statistics are made worse by the paradox that some of the worst housing conditions lie amidst the greatest wealth. In the heart of the Appalachian coalfields, houses are among the oldest and most overcrowded. In the recreation and tourist counties, substandard locally-owned dwellings stand side-by-side with modern absentee-owned second homes. Throughout the region, mobile home parks along the roadways and riverbanks have been the principal solution to the lack of adequate housing.

A multitude of reasons have long been given for the persistence of Appalachia's housing crisis. Mountainous terrain, lack of water, sewage and other services, shortage of capital, and frequent flooding are among them. In recent years, growing reference has been made to another problem: the barriers which land ownership patterns pose to decent housing. In West Virginia, for instance, the Governor's Housing Advisory Commission reported that:

> A related problem in coal mining areas of the state is that most of the developable land is owned or controlled by natural resource companies. The speculative value of the property makes it nearly impossible for builders to purchase a permit that permits development of low and moderate housing.[1]

To this the 1980 President's Coal Commission added, "The land shortage in Appalachia is, in part, attributable to coal companies, railroads, and other corporations owning much of the coal-rich acreage. With future plans to mine their holdings, companies prevent their unimproved properties from being developed...."[2]

While the problem of land ownership's impact on housing is recognized, its extent and complexity has lacked systematic study. The President's Coal Commission stopped short of so doing, pointing out that "Statistics for land ownership are often buried in inaccessible or untraceable county records."[3] However, data obtained in this study allows for the first time an in depth exploration of the role of land ownership patterns in Appalachia's housing crisis.

In summary, the study finds that land ownership has both direct and indirect impacts on the housing market. Directly, such ownership patterns restrict the availability of land, place barriers on financing where mineral rights are severed from surface ownership, and inflate the price of land on the local housing market. Indirectly, land ownership patterns affect housing availability through impacts on financing, the provision of services, and the growth of a building industry. Land uses associated with these ownership patterns, particularly strip mining for coal, may also affect housing through increasing flooding on the already limited flat lands of the region. In this chapter, each of these factors are given detailed examination.

The Impacts of Land Ownership: Direct Impacts

Theoretically, Appalachia has abundant land for its housing needs. In 1970 in the average rural county in our sample, there was only one house per every 35 acres of land. But, one must look further. Much of this abundant land lies empty and inaccessible to the region's people. Over one-half of it is owned by absentee owners, corporations, government agencies and large holders who value it for its mineral or timber resources, for its recreation potential, or for its speculative value--not for meeting local housing needs. Add to this other land which is uninhabitable, or that is used for farmland, roads, schools, industry--and the result approaches a land shortage in the midst of a land rich region. Interviews in numerous counties document the pattern: land for housing is often simply unavailable for purchase.

The Impacts of Land Ownership: Land Availability

Everywhere we looked in this study we found people who told us that land for housing is just not available to them.

> **In Walker County, Alabama, a representative of Farmers' Home Administration says: "The land situation is this: land is tightly held by coal and timber concerns. Very little turnover of land occurs, the vast majority of turnover being among family members."
>
> **In Harlan County, Kentucky, the housing market is going from bad to worse. In 1978 there were 13,413 units, 53 percent of them substandard. "There is no space to build because companies own so much land, and the companies won't sell a piece of land as big as a desk," says a local miner.
>
> **In Martin County, Kentucky, there is a desparate need for more houses. In May 1977 there was a vacancy rate of only 0.3 percent in Martin County. Thirty-one percent of the county's occupied houses were classified as substandard. A housing plan prepared by the Big Sandy Development District notes the role of corporate owners in adding to the pressure for housing in the county. "The coal companies are directly responsible for many recent events in the housing market, and own up to 50 percent of the land in Martin County. Many homes have been bought in the hollows at fairly high prices, and families displaced then joined the incoming workers in the search for housing in Inez and Warfield." The editor of the local newspaper, Homer Marcum, puts even more strongly the connection between corporate land holding and the county's housing shortage: "The average individual who must work for a living doesn't stand a chance of getting any land from them (the companies); he is simply left out of consideration."

**In northeastern Tennessee coal counties, there is a similar pressing shortage of housing for local residents. In Campbell County, there was a shortfall of 6,269 units in the 1980 housing supply, 52 percent of the total number of households now in the county. In neighboring Claiborne County, a non-profit citizens' group asked American Association, Inc., a major land holding company there, to make available a small tract of land to build sorely needed houses for the local population. Although the company owned tens of thousands of acres of land, it refused to provide any land to meet housing needs.

From the tightly packed valleys of West Virginia to the open plateau and rolling hills of northern Alabama, the picture looks the same. Local residents cannot obtain land for housing because it is closely guarded by its corporate and absentee owners.

Severed Ownership of Minerals

Ownership of mineral rights extends the control gained from concentrated ownership of land, and further restricts the possibility of housing development. Throughout the coalfields there is extensive separation of mineral from surface ownership. Residents who own surface land without the underlying mineral rights are subject to many uncertainties: companies may show up to strip mine the land at any time; conflicts may develop over title. Severed ownership of mineral rights also affects home building, through restricting the availability of loans. As one bank officer in Dayton, Tennessee, explained, lack of mineral rights acts as a "cloud" on the title, and title companies will not insure it. Without title insurance, lending institutions--including HUD and Farmers' Home Administration--will not make loans, and neither first nor second mortgages are available to these property owners. A Tennessee resident, Mr. Raymond Weaver of Sale Creek, outside Chattanooga, can attest to such policies. A Post Office employee, he can show papers from more than five lending institutions which turned down his application for money to renovate his home. The rejections were made because he does not own the mineral rights beneath his 46 acre farm.

Inflated Prices

The scarcity of land for housing created by concentration of ownership in large blocks also drives up the prices of what land is available for sale. The consequent inflated price for land affects residents in coal counties and recreation counties alike. In coal counties, local residents must compete with energy companies and land speculators; in recreation areas they compete with second home buyers and resort developers. The effect is the same: to place even small tracts of land out of the price reach of most local residents, especially low income and blue collar families.

Inflated Prices in the Coalfields

In Walker County, Alabama, the agricultural extension agent says, "The price of land is now based on the value of the underlying minerals, whether it is to be used for agricultural, housing or mining purposes." In the rural part of his county, homesites now range from $2,400 to $3,000; while near Jasper such a lot would sell for $5,000-$7,000. In Walker County, the per capita income in 1974 was only $3,345.

In other coalfield areas, scarce land fetches similarly inflated prices:

**In Martin County, Kentucky, where the demand for housing is so high that only 0.3 percent of housing is unoccupied, the price of housing has more than doubled in the last five years, according to the Director of the County Housing Agency. County Planner, Larry Smith, says corporate purchases of coal lands at unusually high prices have both eaten into the county's stock of residential land, and helped to drive up land values.

**In neighboring Pike County, Kentucky, almost all of the developable land in Elkhorn City is owned by the Elkhorn City Land Company. Its 1,405 acres are assessed for taxation purposes at $36 per acre. Each year the company sells two or three lots for housing, each 50 feet by 100 feet. The price is $20,000-$25,000 each.

**Astronomical land prices are found in Harlan County, Kentucky, too. The local development district has found two sites which it would like to develop for housing. One 6½ acre tract is for sale by an architect at $500,000. Another 8 acre tract is for sale by a Lexington physician for $250,000.

Lack of housing land available in coal counties affects neighboring counties. A young lawyer in Lincoln County, West Virginia, says: "Low and middle class families can't afford housing. One reason for the shortage is that people from Logan County coalfields have to live in Lincoln County. Logan coal companies own surface rights also, so people can't get housing there." The consequent pressure on housing in counties adjoining coalfields drives up the prices there also.

Inflated Prices in Recreation Areas

While in the coalfields, local residents must compete with the prices energy companies can afford to pay for land, in the recreation areas, residents face a similar price pressure resulting from second home buyers and resort developers. In some of these counties, land availability for housing is already restricted by U. S. Forest Service ownership. Competition for the remaining land is heightened by urban dwellers, with incomes far above those of most local residents, who pay prices for "a place in the mountains" that few local residents can afford.

Watauga County, North Carolina, illustrates the problems facing residents in recreation counties. In 1960, 5,554 housing units existed in the county, including 727 second homes. By 1970, 3,000 new homes had been added to the housing stock. Over 1,000 of these--more than a third--were second homes. According to the Housing Census, 21.2 percent of the houses in the county in 1970 were "seasonal and migratory"--likely resort and second homes intended for occasional occupancy.

Many more possible housing sites in Watauga County have been subdivided in recent years. Of the 129 subdivisions identified, 9 were recorded in the 1950's, 40 in the 1960's and 80 in the 1970's. This reflects the impact of the last two decades' resort and recreational development, as well as population increases. But land subdivided for housing does not necessarily result in more houses available to the local population. Of the 10,000 platted lots recorded in the Subdivision Inventory, only 16 percent had houses built on them. Since many second home lots are sold without any initial intent of construction, the county experiences the negative impacts of inflated land prices without the accompanying benefit of construction employment or additional tax revenues.

Speculation and subdivision of land have been major factors in driving up land values in Watauga County, as in others affected by recreation development. The tax base in Watauga County, reflecting these higher land prices, increased over 300 percent between 1961 and 1974. The cost of housing more than doubled, increasing far faster than the wage rate in the county. As a result, many local families have little hope of owning their own home.

In counties like Watauga, the housing pattern reflects a dual standard. Second homes in resort communities are often of higher quality and receive more services than the scattered, rural, often substandard homes inhabited by local people. The latter feel they subsidize with county revenues the second home development, while at the same time having to bear higher land and housing costs. They resent the paradox.

Similar patterns to Watauga County's are found in other counties affected by second home and tourist development. In Cumberland County, Tennessee, for example, subdivisions have sprung up as land values have increased. Ten years ago there were only two subdivisions and 10,000 parcels of land in the county. Now, according to Martha Oaks, the county tax assessor, there are numerous subdivisions and 45,000 parcels of land. Housing is available in Cumberland County--if one can afford to buy. In the last 15 years the price of land has risen from an average $100 an acre to $1,000 an acre. Land speculation and increased demand from recreation and residential development have served to place prices out of reach of low and middle income families.

The General Pattern

These case studies suggest that land ownership patterns contribute to lack of land for housing, especially for low and middle income families. In the coalfield counties, ownership of large blocks of land for possible energy development means that land for housing is simply not available. Competition for what land is on the market sends prices soaring. In recreation counties, land speculation connected with tourism and second home development serves to place land and housing costs out of the reach of many local residents.

If the relationship between land ownership and housing problems revealed in these case studies is a general one, we might expect to find significant correlations between land ownership patterns discovered in the 80 county survey and various housing indicators.[4] To avoid skewing by urban patterns, the analysis will be applied only to the 72 counties of the sample which are "rural" (i.e. more than 50 percent of the population live in rural areas.)

Overcrowding

One indicator of housing shortage is the amount of overcrowded homes in a county, measured by the number of homes with more than 1.01 persons per room. If residents cannot obtain land for housing, or cannot pay escalating land prices, one solution might be to crowd into the existing housing units. From the case study data, it might be expected that overcrowding will be correlated with degree o unavailability of land, connected with high corporate or absentee ownership. On average, a county in our sample has 12.4 percent of its housing units overcrowded (with more than 1.01 persons per room), compared to the national average of only 8 percent overcrowded housing.

In these 72 counties, the general relationship holds: the greater the degree of corporate land, or the greater the degree of absentee-owned land, the greater the proportion of housing units which are overcrowded.

> **Of 26 counties with a higher than average degree of corporate ownership, 25 (96 percent) also had a higher than average proportion of overcrowded housing. Of 46 counties with a low degree of corporately controlled land, only 23 (50 percent) had above average proportion of overcrowded housing.[5]
>
> **A similar pattern holds for absentee ownership: of 47 counties with a higher than average degree of absentee ownership, 35 (74 percent) had higher than average overcrowded housing. This compares with the 25 counties which had low absentee ownership, of whom 52 percent had higher than average overcrowded housing.[6]

A further measure of unavailability of land for housing can be compiled by combining the degree of government ownership in a county with the degrees of corporate and absentee ownership. This measure of unavailability also correlates with the degree of overcrowded housing.[7] Of counties with high levels of overcrowded homes, 71 percent also have a high degree of "unavailable" land.

TABLE 1: "Unavailable Land" BY "Overcrowded Housing"* in 72 Rural Counties

** Number of counties ***Row percent. ****Column percent.	Lo Crowdedness (Less than 10%)	Hi Crowdedness (10% or Greater)	TOTAL
Lo land control (Less than 40%)	20** 58.8%*** 83.3%****	14 41.20% 29.2%	34 47.2%
Hi land control (40% or greater)	4 10.5% 16.7%	34 89.5% 70.8%	38 52.8%
TOTAL	24 33.3%	48 66.7%	72 100.0%

Pearson's R = .411 at the .0003 level of probability.

*All land owned by corporations, government and absentee owners, i.e. not by local individuals, is defined as "unavailable" for local housing. "Overcrowdedness" is defined as more than 1.01 persons per room according to the 1970 Census of Housing.

One might respond that the coal counties, with their denser populations, are skewing the relationships here. However, even within the category of coal counties, the relationship holds: 63 percent of the coal counties with high levels of overcrowded housing have high degrees of "unavailable" land. Eighty percent of coal counties with less crowded housing show greater local control of land.[8]

Within the non-coal counties, as a group, the connection between unavailability of land and overcrowding also holds. Of the non-coal counties with a high degree of unavailability of land, 75 percent have a high level of overcrowded housing. By contrast, of the non-coal counties where land is more likely to be available (because less is held by corporate, absentee or government owners), only 7 percent had a high level of overcrowded housing.[9]

While the effects of unavailability of land on housing [illegible] be the same in coal and non-coal counties, it is likely that the mechanisms at work differ. In non-coal counties, the impact of corporate land holding on overcrowded housing is not found to be statistically significant. However, the relationship between absentee ownership and this housing indicator is strong. All of the non-coal counties which have a high degree of overcrowded housing--100 percent--also have a high rate of absentee ownership. In these non-coal counties also, the degree of government or public non-profit ownership is related to the degree of overcrowded housing. As we would expect from the case study findings, the aggregate data confirms that in non-coal areas it is primarily the absentee ownership of second homes and recreation developments or government and public non-profit land ownership which makes land unavailable to local residents.[10]

In the coal counties, on the other hand, the indications are that the impacts of energy developments on housing are the same whether the energy land is owned by corporations or absentee individuals.[11] In both cases, the housing shortage is exacerbated by land ownership patterns which help to keep land out of the housing market.

Old Housing

If, as the data presented so far suggests, land ownership patterns act as a significant barrier to new housing development in Appalachia, one may expect a further correlation between concentration of land ownership and age of housing stock.

Such a statistical relationship is indeed found here. In the 72 county sample, 59 percent of the homes were built before 1950 (this compares with a national average of 48 percent). In the coalfield counties this proportion rises to 64 percent (compared with 53 percent in non-coal counties). We might expect many of these older houses in the coalfields to be in the coal camps, built before the 1950's slump in the coal market, when coal companies were principal housing providers for the miners and their families.

Within the coalfield counties themselves, there is a significant relationship between older housing and the degree of corporate control of land. Such a correlation suggests that where corporate owners hold large amounts of land, little becomes available for new housing to be built. In Mingo County, West Virginia, for example, where corporate ownership of land and minerals equals 180 percent of the county's surface acreage, 83.2 percent of the housing was built before 1950. It should be noted that, in addition, almost a third of the county's housing stock was torn down between 1950 and 1970, not to be replaced. Altogether, in the four West Virginia counties which lie at the heart of corporate control of the southern West Virginia coalfields--Mingo, Logan, Raleigh and McDowell--71 percent of the housing stock in 1970 was over 20 years old.

Throughout the coalfield counties of our sample, the relationship holds: the greater the corporate control of land, the greater the proportion of older homes in the county. While the general relationship is not a strong one, it should be noted that outside the coalfields, no statistical relationship was found between corporate control of land and age of housing.[12]

When mineral rights are considered within the coalfield counties, the relationship increases in strength, helping to confirm the case study findings that severed mineral rights act as an additional obstacle to home building. They place a "cloud" on title, making loans difficult to secure. In general, the statistical correlations suggest that the greater the control of mineral rights (apart from consideration of the surface), by corporations, government and absentee individuals, the greater the degree of housing built before 1950.[13]

When concentrations of control of both surface and minerals are combined, these relationships still hold: in the coal counties, the greater the extent of resource ownership by corporations, government, and absentee owners, the older the housing supply.[14]

In general, the data lends support to the hypothesis that it is land ownership patterns which serve as a barrier to housing development in Appalachia. This argument runs counter to one conventional explanation of Appalachia's housing shortage--that it is the shortage of flat land that is the primary barrier to housing development.

The Flat Land Argument

The conventional argument about the source of Appalachia's housing shortages--the terrain argument--makes assumptions about the availability of land which do not withstand careful scrutiny.

First, the flat land argument assumes that, if more flat land existed in the region (or if more land could be artificially flattened), it would be made available for housing. The concentration of ownership in the hands of absentee and corporate owners documented in this study suggests otherwise. These owners value the land for its mineral, timber or other resources, not for its potential to house local people. As Ernest Chaney, of the Pikeville, Kentucky, Housing Authority, says "One hundred years from now, the coal companies are going to be going for the coal under the flat land." As long as the land has other value for its owners, it is not likely to become available for housing at reasonable prices.

The terrain argument also assumes that housing shortages are found only in the mountainous areas. In fact, the indicator of housing shortage used above--the degree of overcrowding--is found in counties with all types of terrain. From the relatively flat land of Walker County, Alabama, to the steep hillsides of Harlan County, Kentucky, chronic housing problems exist.

The Tennessee counties of this study serve as a graphic illustration of this point. If lack of flat land were the key to housing shortages, one would expect to find significant overcrowding only in the more mountainous counties of the study--mainly Campbell and Scott counties. In fact, higher than average levels of overcrowded housing are found in these two counties, but also in the plateau counties of Fentress, Bledsoe and Sequatchie, where terrain is not an intrinsic barrier to home construction. In Tennessee, a better explanation of the overcrowding in these counties is found in the concentration of land ownership. The index used here is the percentage of surface and mineral acres owned by the top five landowners in a county. High concentration of ownership seems to be closely correlated with higher than average levels of overcrowding. The converse is also true: counties with low concentration of ownership also have low levels of overcrowding (see Table 2).

Table VI-2 Impact of Control of Surface and Mineral Rights on Overcrowded Housing In 14 Tennessee Counties

Percent of surface + mineral controlled by top 5 owners in county. **	% HOUSES WITH MORE THAN 1.01 PERSONS PER ROOM*	
	HIGH	LOW
High	Campbell Scott Fentress Bledsoe Sequatchie	Van Buren
Low	Cumberland Marion	Anderson Morgan White Rhea Hamilton

*1970 Census of Housing. High or above average is greater than 13% of the houses in the county.

**Total surface and mineral acre ownership expressed as percent of total county surface. High or above average is greater than 33.3% of the county surface.

Finally, the terrain argument for Appalachia's housing shortages does not stand up to historical scrutiny. In the past, more housing units existed in many parts of Appalachia than exist today. They were in coal camps, provided by corporate landowners for the families of the many miners who were needed to run the deep mines which then thrived. While the quality of this coal camp housing may have left a lot to be desired, the fact remains that housing sites were there, which are not available today. What has changed is not the terrain but the policies of the corporate landowners.

An example of how corporate controllers of land have changed their policies and taken land out of the housing supply is in the Clear Fork Valley of Campbell and Claiborne counties, Tennessee.

> Once a prosperous mining valley much of the valley's land now lies off limits to its residents. Whole coal camps, like Westbourne, have simply disappeared. Since the 1880's, the valley has been dominated by a single large corporate owner--American Association Ltd., a British company. It leased its coal to smaller companies to mine, and these in turn built the coal camps for their miners' families. In 1950 there were 10 large underground mines in the small Claiborne County section of the valley alone, employing some 1,400 men. The valley had one major community, Clairfield, and many surrounding coal camps. During the 1950's, however, as in the rest of Central Appaalchia, the mines began to close, and the valley's people joined the migration to the cities of the North in their search for jobs. As the mines closed, American Association took possession of the coal camp homes. It had no interest in maintaining the homes, or the communities. The company manager went on record as saying "The people would be better off, we would be better off, if they would be off our land."
>
> More than two thirds of the company houses were torn down and not replaced between 1962 and 1972. The company made it clear to residents that they were not welcome. Leases, if granted at all, were for only 30 day periods. Notices were posted at the stores, mines and post office, saying, "No specified reason is needed if the owner desires to have the house vacant.... No one is obligated to remain in a house. If he is unhappy about his surroundings he is free to move immediately."
>
> American Association accepted no responsibility for the communities it was destroying. In an interview with a British Broadcasting Company team in 1974 the company manager in Middlesboro, Kentucky, Alvarado E. Funk, was asked:
>
> BBC: Don't you have a sort of moral responsibility to maintain the people who wish to stay in that area, and who could have been working their fingers off to keep them in a reasonable condition of living?
>
> FUNK: No, sir, these people don't work for us and never have worked for us--they're just people.
>
> BBC: But they're living on your land, aren't they?
>
> FUNK: We don't have any responsibility for them...

BBC: You mean they get in the way of strip mining operations?

FUNK: Well, I don't say they get in the way, but they just don't add anything to the assets of the company.[15]

Throughout the coal camps a similar policy shift occurred: the industry collapsed, people left the region, the houses were torn down. Now, the coal industry is booming again, but housing sites for the returning people are not available. Buildable land remains vacant as corporate owners refuse to make available land which housed previous generations of miners.

This pattern can be substantiated by comparing housing units in 1950 to those in 1970 in major coal areas. Altogether, for instance, in the twelve eastern Kentucky counties of our survey, there were 8,000 fewer housing units in 1970 than there had been in 1950. In Harlan County, Kentucky, where 75 percent of the land sampled in our survey is corporately held, there were 16,782 housing units in 1950; by 1970 there were only 12,446, a decline of 26 percent. At the same time we are told that there are no housing sites available in the region.

Similarly in West Virginia in the four southern coalfield counties in our survey--Mingo, Logan, McDowell and Raleigh --there were 12,579 more housing units in 1950 than in 1970. In McDowell County alone, the number of housing units declined in this period by almost a third. We are told that these counties have the most rugged terrain, and that this is the cause of the housing shortage. The prior existence of more housing units in these counties refutes this argument. A more plausible explanation of the housing shortages there is that these counties are also the most tightly controlled by corporations. As the Land Ownership chapter of this report details, in this four county area, almost 90 percent of the land sampled is corporately held, amounting to over two thirds of the total surface of these counties.

Our data suggests that terrain is not so much of a barrier to housing development as are the policies of corporate landlords. Once the major providers of land for housing in the coalfields, much of their land suitable for housing development now lies empty.

Barriers to Housing: Indirect Effects of Land Ownership and Use Patterns

The analysis presented so far suggests that land ownership must be considered as a major factor contributing to housing shortages in Appalachia. The ownership patterns found in this study keep land unavailable to the housing market, and/or out of reach of low and middle income buyers. However, the importance of land ownership in directly affecting housing shortages should not detract from the contribution of other factors. These other barriers to housing development in the region, often acknowledged in other studies, include lack of financing, lack of suitable infrastructure (notably water and sewage), the occurrence of repeated flooding, and the dearth of a construction industry. However, while giving due weight to these other factors, it is important to recognize that they too are affected by land ownership and use patterns. Land ownership has indirect effects as well as direct effects on the region's housing problems.

Lack of Adequate Financing

Throughout our case study interviews, local residents report the difficulties of obtaining adequate loans to finance land purchase, the building of new homes and improvement of old houses. In part, these difficulties reflect current national financing problems--high interest rates and a tight money supply. However, these contemporary national problems are not new in Appalachia, where they are compounded by other problems peculiar to the region. And it is these particular features of financing difficulties that are influenced by the region's land ownership patterns. The factors involved are demonstrated in both private sector and public housing financing.

Private Sector Financing

It is ironic that many of the reports of tight financing for housing come from the coalfields, where vast amounts of wealth are now being produced from the region's natural resources. Enough capital is produced in these counties to develop local housing. Indeed, according to census data, banks and other financial institutions in the average coal county in this survey had some 56 percent more money on deposit than the average non-coal county. Rather, what these counties lack is the reinvestment of that wealth in the long term improvement of the community.

It is the "time" deposits in local banks which provide the major pool of lending capital whether for economic or community development. In the average coalfield county of our sample, time deposits amount to only 64 percent of total bank deposits in the county, compared with 71 percent in non-coal counties. Some coalfield counties fare even worse. Harlan County, Kentucky, for example, where housing is especially bad, has only 24 percent of its bank deposits in "time" deposits. Capital flows out of the region for investment elsewhere, rather than becoming available for local development.[16]

In the coalfield counties of our sample, a statistically significant relationship exists, such that the higher the degree of absentee ownership the lower the proportion of local bank assets in "time" deposits. While the relationship is not a very strong one, it should be noted that outside of the coalfields, no statistical relationship was found.[17] The coalfield pattern suggests that absentee ownership of resources actually detracts from the possibilities of local development of housing, by restricting the availability of local private financing.

Lack of locally controlled capital leads to a lack of home finance institutions. In the rural Appalachian region, savings and loan associations, nationally the principal source of home mortgage money, are few and far between. Even where lending institutions do exist, their policies may serve to exclude or restrict access of rural and poor people to what financing is available in a county. In Harlan County, for example, according to our interviews, local banks have required a 30 percent downpayment on a home (during periods when the average downpayment required nationally was 10 percent) and they required a shorter payback period (10-15 years).

In other case studies, it appears that rural parts of the county do not gain as much in loan finances as the wealthier urban areas.

> **In Scott County, Virginia, the Estivill magisterial district, containing the towns of Gate City and Weber City, has 40 percent of the county's population. Yet of the only two banks operating in the county, Virginia National lent over three times as much money in the Estivill district as in the rest of the county combined, and Bank of Virginia lent six times as much money there between 1975-1977. The Estivill district is considerably wealthier than the rest of the county, with only 21 percent of its population below the poverty line, compared with 35 percent in the rest of the county.
>
> **In Hamilton County, Tennessee, case study interviews suggest that some banks discriminate against the county's rural population. Owners of property in the expensive Signal Mountain neighborhood seem to have had little difficulty obtaining credit from local banks, despite not holding the mineral rights under their land, while people in the more isolated rural parts of the county, such as Flat Top Mountain, Sale Creek and Montlake have been told that their lack of mineral title

is a major obstacle to obtaining loans for building or renovating housing.

Private sector financing for homes seems to be fraught with difficulties for many Appalachian residents. At least some of these difficulties have a connection with the patterns of land ownership and use found in the region.

Public Financing

It is in part to compensate for the deficiencies of private sector financing that programs such as the Farmers Home Administration and HUD exist. Yet these programs too, have failed to remedy the problem of Appalachian housing shortages.

> **In Harlan County, Kentucky, where available housing falls far short of the population's needs, and private financing is hard to obtain, there is not one FmHA loan for a new home in 1979.

Our study suggests several reasons why FmHA and HUD programs may fail in Appalachia:

1. Firstly, they presuppose that land on which to build housing is available. In fact, such housing sites are extremely difficult to come by in many parts of the region.

2. Secondly, they demand clear and "unclouded" title to the land, which often is not available, at least in the coalfields, where mineral rights are often severed from surface ownership.

3. Thirdly, the inflated prices produced by housing shortages may deplete the amount of funds in a particular area. In Walker County, Alabama, for example, FmHA last year "spent it faster than they could get it," and in the first month of the highest financed quarter of the year, spent all their allotment for that quarter. FmHA officials say that this is largely due to the extremely high price of land for homesites.

4. Fourthly, FmHA and HUD restrictions on physical site requirements severely limit their funding availability in some areas. In Harlan County, Kentucky, for example, the Harlan Housing and Urban Development Agency has had difficulty in getting site approval from HUD evaluators because there is no fire protection, police, city water

> or sewage, ambulance service, or shopping center. One of the local agency staff describes this as "a basic contradiction between federal regulations and the reality of life here."

Insofar as the lack of local services is a barrier to federal financing, the low tax base of these counties can be partially blamed. And, as the chapter on taxation and services shows, this is associated with land ownership patterns in the region. Insofar as physical features such as flood plain restrictions, water supply are to blame, as we shall see below in the consideration of infrastructure, these too are affected by land ownership and use patterns.

LACK OF A SERVICES INFRASTRUCTURE

The inadequate development of a service infrastructure--roads, water, sewage systems--has often been blamed for Appalachia's housing problems. Certainly these services are lacking. In the 80 counties of this survey, over 90% of rural homes lacked sewage service. And nearly 43% of the homes in the average county of our sample lacked some plumbing. Roads in rural areas are generally poor, ill-paved or not paved at all. In the coalfields, coal hauling, much of it in overweight trucks, has resulted in severe deterioration of secondary roads which were neither designed nor built for such traffic.

Several factors play a part in the infrastructure deficiencies of Appalachia. Some of them, in turn, are related to land ownership and use.

1. Ownership patterns of large blocks of land which are unavailable for housing combine with mountain terrain to make delivery of water and sewage systems expensive. Houses are scattered in isolated pockets, or strung out for miles along narrow valleys.

2. Underlying and compounding these difficulties of service delivery is the lack of adequate tax revenues in these counties with which to provide service to residents. As the chapter on taxation and services details, property tax structures in the region are regressive and deficient, and do not generate enough capital for local services. Taxes per acre are lower in the counties where land ownership is most concentrated. It is these same counties where our analysis above has suggested there are already the most barriers to overcome in order to develop housing. The tax structure only compounds their inherent problems.

Appalachian counties' inability to provide sewage services to rural residents is symptomatic of the problem. In our 80 county sample, the average expenditure per capita per year by county governments on sewage services was 83¢, amounting to less than a half of one percent of total county expenditures. In fact, in the 1977 Census of Governments, in only seven of the 80 counties were any county sewage expenditures reported at all.

The lack of available services may render scarce land that does become available for housing unuseable, or unfinanceable. In Harlan County, two blocks of land which might be developed for housing remain empty. One, a 99 acre tract owned by the Chamber of Commerce--has gone undeveloped for nine years because there is no access bridge across a river. Another 83 acres,donated by the Eastover Mining Company for residential development,remains empty because of lack of water services One local housing agency staffer maintains that so long as HUD holds to its flood plain and sewage regulations, 92 percent of Harlan County will remain ineligible for HUD monies. Many other Appalachian counties, especially in the coalfields, are under a similar disability.

Even where water and sewer services are provided, they may discriminate against local residents. In the resort counties in particular, our case study interviews suggest that these services may be more available to absentee second home buyers and resort developers than to local residents. Local people believe that the developers have more political influence, and use it to get services delivered. For example, in Campbell County, Tennessee, several families had lived in the Shady Cove area for years without city water. All their attempts to get water lines extended to them had been in vain. In 1978 a developer constructed an exclusive vacation home subdivision about one mile from Shady Cove. The water line was extended to the new subdivision, bypassing the Shady Cove residents. As can be imagined, this caused hostilities between local residents and the developers.

The example of Shady Cove is not an isolated one. In the 19 tourism and recreation counties of our 80 county sample, we found a strong correlation such that the greater the proportion of absentee land ownership (likely resort developments) the greater the percent of rural homes with sewage services. This correlation was not found for any other type of county.[19]

Flooding

Another argument given both for lack of suitable land, and for difficulties in financing, is that many available housing sites are in the flood plain. Certainly, flooding has taken its toll on housing in Appalachia, particularly in the Central region. The April 1977 flood, for instance, destroyed 600 homes in the Tug Valley Area and 600 more in Harlan County. In the two areas together, over 5,000 more homes were damaged. Smaller floods persistently rack Central Appalachian valleys.

It is important to recognize, however, that the causes of flooding are at least partially related to land ownership and land use patterns. Historically, corporate ownership has been associated with the higher areas away from the flood plain. This pattern emerged partly because the valuable, cultivatable land along the river bottoms was more difficult for the coal companies to obtain from local farmers than were the hillsides, and partly due to the geology of the region that made coal seams on the mountainsides more accessible for mining. Regardless of the cause, the areas along the river bottoms traditionally have been left for housing and small farms.

With the advent of strip mining and other destructive land uses in the mountainsides, however, the flooding in the bottom land has become more frequent and more destructive. A growing number of studies now establish the link between strip mining practices and flooding (see Chapter VII, p. 177). The combination of the ownership and the use pattern is serious for housing: while higher lands are owned by the corporate and absentee holders who use it for energy extraction, their use of that land limits the possibility of housing in the valleys.

Lack of a Building Industry

It is little wonder, given these various obstacles to housing in Appalachia, that many parts of the region also lack a building industry. Traditionally, as has been seen, the coal industry was the major housing supplier. While the industry no longer is building, few new opportunities have emerged for developing and marketing affordable homes. Even where housing projects do develop, according to housing experts, local builders cannot sustain their business due to uncertainties of when land will become available for the next project.

Available Alternatives

Unable to buy land or their own homes, many Appalachian residents have only two options available. Both fall far short of being acceptable alternatives. Throughout the coalfields, many rented homes remain, despite the destruction of so many coal camp houses inthe 1950's and 60's, and in coal counties and non-coal counties alike, mobile homes increasingly dominate the housing scene.

Coal Camp Homes

In the coal counties, the extent of company housing is suggested by the strong correlation between degree of corporate ownership of land in the county and extent of tenant dwellings.[21] In the average coal county of our sample, 31 percent of the housing units in 1970 were rental units. In non-coal counties only 25 percent were in this category. In some of the central Appalachian coal counties, the figure climbs even higher--to almost 40 percent rental units in Harlan, Bell and Breathitt counties, Kentucky and in McDowell, Mingo and Logan counties, West Virginia.

This relationship also confirms what has been argued in the preceeding sections: the extent to which corporate ownership of land acts as a barrier to people building or obtaining their own homes.

For many Appalachian people, coal camp life is not a bygone era. Facing no alternative, people remain, often dependent upon the will and wishes of the company landlord. In staying, they face insecurities of tenure, delapidated housing, and fear of the company's power.

An example of this state of affairs is in Logan County, West Virginia, along Rum Creek, where the land and housing is owned by the Dingess Rum Coal Company. In Logan County, hundreds of coal company homes were destroyed during the coal slump of the 1950's and 1960's. Now, even though the housing crisis is desperate, the land where those houses stood lies vacant, with the companies refusing to sell. The coal industry is expanding now and houses are needed for miners, but Dingess Rum continues to tear down liveable housing as tenants die or move out. Along Rum Creek, residents have heard that the company now plans to tear down what housing remains. Richard Cooper, a UMWA safety inspector who lives in a company house, says that Dingess Rum officials recently got tenants to sign a form agreeing to vacate their homes within 10 days if the company asks them to. "We used to have a 30 day notice period before they could put you out. They just lowered that to 10 days. You have no choice. You sign or you're gone."

Cooper knows the policies of the company well. He grew up on Rum Creek, where his father rented a company house. Now Cooper, his wife Phyllis and their three children live in a Dingess Rum house at Yolyn which is at least 50 years old. The Coopers pay $89 a month in rent for the house, which sags with age. The roof has a gaping hole in it and water sprays from broken pipes under the house. But the Coopers don't do a whole lot to improve the house, because the rent will go up if they do. The Coopers would like to buy land on Run Creek for a house. But the company flatly refuses to sell. "I could go up and offer $100,000 for this house and they'd laugh in my face, even if I had it in $100 bills."

In Rum Creek, and throughout the coalfields, tenancy combines with the lack of alternatives in both housing and jobs to place power in the hands of the landlords. An example is seen inthe small community of Braden's Flats in the upper east Tennessee coalfields, where most residents are tenants of the Coal Creek Mining and Manufacturing Company. In 1979, the company leased land for strip mining within a few hundred feet of several families' houses, and applied for permission to close the county road into the community in order to extract its underlying coal. In what might, in other situations, have been a controversial matter, all the affected residents of Braden's Flats gave permission for blasting operations, and indicated opposition to the disruption of their road. Their fear of the "company" is all too common in coal camp communities.

Mobile Homes

For those not dependent upon the coal camp for their housing, the other option is often the mobile home. In parts of Appalachia, the trailer park appears to have replaced the company town. Again in Logan County, a resident says:

> It seems that the general policy of Dingess Rum (Coal Company) is to make their housing as unbearable as possible in order to coax county residents into trailer camps. Today, Dingess Rum makes as much renting families plots of land on which to place a trailer as they used to make renting housing. And, they pay less taxes, because the land is considered idle for tax purposes.

While the 1980 Census data on the number of new mobile homes in Appalachia is not yet available, case study material indicates the rise in this form of housing to be staggering.

**In seven coal producing counties of southwest Virginia, a record number of occupancy permits was issued between January 1, 1979 and June 30, 1979. Of the 1,335 permits, 1,012 or 76 percent were for mobile homes.

**In Wise County, Virginia, mobile homes accounted for over 70 percent of the new housing units between 1970 and 1976.

**In Pike County, Kentucky mobile homes represented 98 percent of new housing units between 1970 and 1977.

For many, the mobile home is an easy way to bypass the obstacles to housing which we have identified in this chapter. Unable to buy land on which to build, a family can squeeze a trailer onto a small plot of family land, or place it in a trailer park. Unable to get financing for a house, a family can make the small down payment on a trailer with minimal credit problems. Unable to get the services needed for home building--sewers, water, roads--a family can move into a trailer park where the services are immediately available.

Yet this alternative, like company housing, is less than acceptable, either for the families who must live in trailers or for their communities. A number of problems arise:

Deterioration

Trailers are essentially a short-term solution to a long-term problem. Their life expectancy is much less than that of conventional housing. The housing crisis will still be there in ten or twenty years time when the trailers are no longer inhabitable.

Crowding

The crowded nature of trailer parks, and additions of trailers onto small plots of family-held land, radically changes the rural nature of many Appalachian counties. In Pike County, Kentucky, for instance, according to a survey conducted for the Pike County government, in 1978, the phenomenal growth in mobile homes has resulted in overcrowding of creeks and hollows, and virtual elimination of the farming industry. There were 828 trailers in the county in 1970; 6,389 by 1977. In Wise County, Virginia, 74 percent of the population lives in the 2 percent of land area that is classified as "urban and built up." The population density of this area is 4,035 persons per square mile. From 1970 and 1976, mobile homes accounted for 70 percent of new housing units.

Health

Not only are health problems associated with this crowding of the population into small areas of land, with a consequent overloading of sewage and drainage systems, but there is also increasing concern about health problems from "indoor pollution" in trailers. In many parts of the country, high levels of formaldehyde gas have been detected in mobile homes, emitted from the resins used in wood construction and from insulation. Health problems associated with formaldehyde range from respiratory ailments to cancer and birth defects. The latter are of particular concern, when so many young families start out in mobile homes, for lack of alternatives.

Finances

While mobile homes have financial advantages for families, for their community the converse is true. Mobile homes generate less property taxes for county revenues than do conventional homes, since they are taxed as personal property. Yet they demand at least as many services as do conventional homes.

CONCLUSION

While there are a number of reasons for Appalachia's housing crisis, land ownership and use patterns have been found to be important contributors to it. Ownership affects housing supply directly by limiting the land available for housing, by "clouding" title through control of severed mineral rights, and by inflating land prices through artificially creating land scarcities. More indirectly, land ownership and use contribute to other widely acknowledged barriers to decent housing for low and middle income families--financing, lack of a services infrastructure, and flooding. Even the existing alternatives--principally, either staying in the old coal camps or moving to a mobile home--are affected by the ownership patterns.

To date, local, state and federal agencies on the whole have failed in their policies to recognize the contributing role which land ownership plays in the housing problem. Without adequate intervention on their part, housing policy in the region is largely shaped by the presence and powers of the corporate and absentee landholders who limit or define the alternatives to the status quo. There has been a growing regional frustration with this situation. In many areas of the Appalachian coalfields the income of miners has increased substantially during the past decade. Yet, even with larger incomes, many miners have been unable to obtain even small plots of land, making the building of one's own home an impossibility. Likewise, land is generally unavailable for builders and contractors; thus, there are few single homes or new subdivisions on the market. The experience of those trying to get federally funded low income housing units built in central Appaalchia for the region's large number of elderly or low income families parallels the experience of the region's blue collar workers--quite simply little land is available for housing. As land ownership patterns in the region continue to stifle both individual initiative and institutional efforts to solve housing problems, frustration mounts.

Census after census has revealed that the need for housing in Appalachia is a critical and long unaddressed problem. The region's chronic housing problems are likely to be greatly compounded in the coming years, particularly in the coalfields where more and more miners are needed to deliver the nation's energy resources. In West Virginia alone, according to the West Virginia Housing Development Fund, 85,000 new homes are needed before 1990 in the state's eleven southern coal counties—[21] where the concentration of land ownership in a few hands is among the greatest found anywhere in this study. Here and elsewhere "boom towns" will exacerbate the present situation, as new mines are opened or as synthetic fuel plants are built. In Campbell County, Tennessee, for instance, where already over 50% of the housing is considered substandard, Koppers Company which owns some 34% of the county, plans to build five synthetic fuels plants. According to government studies, one plant alone can generate the need for 10,000 new workers.[22] It is anticipated that the housing problems in the non-coalfield areas of the region will also intensify if the current trend of migration into the region continues.

If the housing needs of Appalachia are to be met, new and creative solutions must be implemented by government agencies in partnership with citizens' groups who represent the landless majority. Strategies such as the use of eminent domain just taxation for large corporation owners, land use planning with housing and quality of life issues as its cornerstone, innovative use of zoning, rebuilding on previous housing sites, protection of the interest of year round residents in counties with substantial second home development, etc., must be tried. Failure to generate new solutions to the barriers that land ownership patterns pose to solving the region's housing problems helps to guarantee that those problems will not be solved.

Chapter VI: Land Ownership and Housing
Footnotes

1. West Virginia Governor's Housing Advisory Committee, "Final Report to Governor John D. Rockefeller, IV, January 1980, p. 29.

2. The President's Commission on Coal, The American Coal Miner, Washington, 1980, p. 54.

3. Ibid.

4. Unless otherwise indicated, housing data is on the basis of the 1970 Census. Recognition is given to the fact that this may be somewhat dated. However, it is the best data available.

5. For 72 counties, Pearson's R correlation = .490 at the .0001 level of probability.

6. For 72 counties, Pearson's R correlation = .419 at the .002 level of probability.

7. For 72 counties, Pearson's R correlation = .411 at the .0003 level of probability.

8. For 37 coal counties, Pearson's R correlation = .435 at the .007 level of probability, such that the greater the degree of "unavailable" land (corporate + government + absentee) the greater the degree of overcrowded housing.

9. For 22 non-coal counties, Pearson's R = .656 at the .0013 level of probability.

10. For 22 non-coal counties, the Pearson's R correlation between percent of county in corporate ownership and level of overcrowdedness is only .240 at the .283 level of probability. However, for absentee ownership, the correlation is .634 at the .001 level. In these counties, a high degree of government ownership is also associated with overcrowded housing (Pearson's R = .486 at the .030 level of probability).

11. The Pearson's R correlation between level of corporation ownership and overcrowded housing is .369 at the .025 level, for absentee ownership it is .511 at the .001 level of probability.

12. For 37 coal counties, Pearson's R = .331 at the .045 level of probability.

13. For 35 coal counties for which data on mineral rights was available, Pearson's R = .457 at the .006 level of probability.

14. Pearson's R = .425 at the .01 level of probability.

15. The above case, including quotations, are taken from John Gaventa, Power and Powerlessness in an Appalachian Valley, University of Illinois Press and Oxford University Press, 1980, pp. 125-135.

16. Further documentation of the capital outflow patterns may be found in Capital Resources in the Central Appalachian Region, report to the Appalachian Regional Commission, Checchi and Company, Washington, 1969.

17. For 37 coal counties, Pearson's R correlation =-.318 at the .055 level of probability.

18. Data developed by Earl Hess, Rural Area Development Association, Scott County, Virginia

19. For 19 tourist/recreation counties, Pearson's R correlation = .557 at the .013 level of probability.

20. For 37 coal counties, the Pearson's R. correlation between percent of corporate controlled land in a county and percent of owner - occupied dwellings is -.488 at the .002 level of probability.

21. Quote in Appalachia, Volume 12, #2, (Fall 1978) p. 12.

22. Department of Energy, "Synthetic Fuels and the Environment: An Environmental and Regulatory Analysis," June 1980 (DOE 9V-0087) p. 147.

CHAPTER VII.OWNERSHIP, ENERGY AND THE LAND IN APPALACHIA

In preceding chapters, we have examined land ownership patterns and their impacts on taxation and local revenues, economic development, agriculture and housing. In each area, the discussions involve questions of how rural land is used, and for whose benefit. Again and again, particularly in certain parts of the region, we have seen that many of the major owners in Appalachia, control land and resources for a single, often exclusive purpose--energy extraction. In addition to the above impacts, energy development directly affects the land and the environment of which it is a part.

Clearly, almost any use of the land will affect it. But, in Appalachia, no other use brings effects so pervasive and so permanent as those of energy development. The legacies of mining, especially strip mining, are well known. Other new developments in energy extraction--synthetic fuel development, oil and gas, shale oil, pumped storage schemes--also will have impacts on the land itself. Now, more than ever, the costs the region is being asked to bear in order to meet national energy demands will be very long-term indeed. The short-term gains of strip mining for coal may preclude future extraction of deeper-lying coal. A stream may take several generations to renew itself after pollution by acid mine drainage. Renewal of mountain-tops removed to extract their underlying coal will take billions of years--geologic rather than human time scales.

In this study we have found new developments in the pattern of ownership of energy lands, which will have significant impacts upon where and how energy extraction is to occur. In the heartlands of the Appalachian coalfields, concentrated corporate and absentee ownership of land and resources has long been a reality. Local people who must live with the consequences of energy development have little say in land use and land care questions. The new developments do not change that reality, except to intensify it. The centers of control of mineral resources are moving ever further from the local arena, and are subject to ever more global influences. On the fringes of the traditional coalfields, absentee ownership of mineral resources is becoming a new reality. And, while coal remains king, Appalachia is fast becoming a region of widely diversified energy resources, contributing oil, gas, synthetic fuels and new minerals like uranium to the nation's search for energy independence.

With new ownership patterns come new forms of technology which will have equally far-reaching effects upon the land as those before it. These technologies cannot be considered in isolation. They too are influenced by ownership patterns. Clearly, for example, an owner without the capital of Occidental Petroleum, through its subsidiary Island Creek Coal Company, would not undertake to plan a 68,000 acre mountain top removal strip mine, as described later. Nor, unless that land was held in a large block would it be likely or able to plan development on such a scale. The introduction of synthetic fuel development by the big oil companies is also mad more possible by their ownership of vast coal and land resources. While technologies of energy extraction are by no means governed by land ownership patterns, the use of certain technologies at certain times and places is influenced by them.

This chapter will review the changes in ownership of energy lands and resource found in our study, then turn to the final "impact area"--the implications which ownership and use of the land for energy development will have upon the land itself and on the environment of Appalachia.

NEW ENERGY DEVELOPMENTS IN APPALACHIA

Takeover of Coal Resources by Energy Conglomerates

As discussed in Chapter II on land ownership, the structure of the coal industry in Appalachia changed dramatically during the 1960's. Some of the region' largest coal companies were acquired by oil companies--Pittsburg and Midway Coal by Gulf Oil in 1963, Consolidation Coal Company by Continental Oil in 1966, Island Creek Coal Company by Occidental Petroleum and Old Ben Coal Company by Standard Oil of Ohio in 1968. Other oil companies began to acquire smaller coal companies and coal reserves (for example, Exxon, Mobil, Texaco,and Ashland Oil). In the 1970's, big oil and gas corporations have extended and consolidated their control of Appalachian coal reserves.

With their increasing control of coal resources, the oil companies bring to the development of the region's coal a global decision-making context, and an unprecedented scale of capital and technical resources. Altogether in our survey counties, eleven oil and gas companies own approximately 1,239,698 acres of surface land and mineral rights. Two of the biggest oil companies--Continental Oil and Occidental Petroleum--own a total of 422,320 acres of surface and minerals combined in our survey area, and control thousands more acres through leasing. Some of the local effects of this broad picture may be sketched in:

In Logan County, West Virginia, over 35,000 acres of coal reserves are now owned by oil companies, and a further 24,000 by Columbia Gas.[1]

The Crystal Block coal mine and its accompanying coal reserves in Mingo County have just been sold by U. S. Steel to Standard Oil of Ohio, together with two U. S. Steel Mines in Pennsylvania. At $750 million, this was one of the largest business deals in coal history.[2]

Allied Chemical Corporation's mineral holdings in Fayette and McDowell counties, West Virginia, have been absorbed into the larger holdings of Armco Steel and A. T. Massey (a subsidiary of St. Joe's Minerals of New York, now in association with Royal Dutch Shell).[3]

Altogether in our 15 county sample in West Virginia, eight large oil companies were found to own more than 340,000 acres of minerals and over 50,000 acres of surface land.[4]

In Tennessee, a family-held coal mining and landholding company, the Tennessee Consolidation Coal Company, has also been purchased by St. Joe's Minerals of New York, and incorporated in their recent agreement for joint development of coal resources with Royal Dutch Shell.[5]

In Virginia and Kentucky, the properties of Virginia Iron Coal and Coke Company were purchased by Bates Manufacturing Company, and shortly afterwards by American Natural Resources Corporation, a diversified energy corporation from Detroit, which is pioneering synthetic gas manufacture from coal in the Dakotas.[6]

In eastern Kentucky, 60,000 acres of mineral rights previously owned by National Steel have reportedly been purchased by General Electric, a subsidiary of Utah International.[7]

In 1979, a tentative agreement was signed for the Blue Diamond Coal Company of Knoxville, Tennessee, one of the largest of the remaining independent coal companies of the region, to be acquired by Amoco (Standard Oil of Indiana).[8] The deal was later dropped by Amoco, in part because of the uncertainties surrounding Blue Diamond's lease-holdings in Kentucky.

Our study also indicates that outright purchase of coal companies and lands does not tell the full story of the extent of oil company control of coal resources in Appalachia. Leasing of mineral rights is extensive, and constitutes such a control of options for the use of land as to be de facto ownership. In West Virginia, Virginia, Kentucky, and Tennessee, our state reports conclude that leasing is a significant mode of control and development of coal resources. Leasing by absentee corporations is connected with absentee ownership. Review of courthouse transactions, found a tendency of large absentee corporate owners to lease their coal lands only to other larger absentee corporations. This is demonstrated most clearly in Martin County, Kentucky. There, the largest landowner in eastern Kentucky, Pocahontas-Kentucky Corporation (a subsidiary of Norfolk and Western Railroads), leases 10,116 acres of its coal reserves to Island Creek Coal Company (subsidiary of Occidental Petroleum); 5,256 acres to Wolf Creek Collieries and 12,408 acres to Martin County Coal Corporation (both subsidiaries of St. Joe's Minerals, and included in its agreement for joint coal development with Royal Dutch Shell); 17,870 acres to Webster County Coal Corporation and 13,400 acres to Pontiki Coal Company (both subsidiaries of MAPCO Oil Company, of Tulsa, Oklahoma); and 16,164 acres to Ashland Oil Company through its subsidiary, Addington Brothers Mining. Nearly 95 percent of the coal owned by Pocahontas is leased to oil conglomerates.[9]

Cooperative ventures between large corporations are another means of extension and consolidation of their control of energy resources. The recently announced joint venture between St. Joe's Minerals and Royal Dutch Shell through its subsidiary Scallop Coal Company for joint exploitation of their coal resources is a case in point. In West Virginia, Exxon and Columbia Gas have pooled their property and resources in the new Monterey Mines in Lincoln County. The same two companies have also joined with Pennzoil in a secondary oil extraction project in the old Griffithsville Oil Field.

The increasing control of the region's coal resources by absentee energy conglomerates provides the capital and technical resources for ever larger-scale technologies to be applied to the extraction of Appalachian coal. Strip mines extending across thousands of acres, removal of entire mountain tops, processing of coal into synthetic oil and gas--all have extensive impacts on the land and water, as well as on the lives of people in the region. Some of these effects are considered below. At the same time, this form of ownership of the coal resources removes ever further from the possibility of local influence the decisions over the development of those resources (See discussion in chapter on Economic Development). Care for the land is not the major concern of such corporations which juggle international energy markets and resources to draw the greatest profits. As the Harlan County conservationist, with USDA's Soil Conservation Service, told us: "A private owner will use something, take care of it and keep it. But a large corporation doesn't have the same feelings. Nearly all of these corporations are absentee and their purposes are exploiting the land. When the coal is gone, there won't be much left."

Expansion of Absentee and Corporate Control of Minerals Outside the Traditional Coalfields

The energy crisis is stimulating development of coal resources which lie on the fringes of the traditional coalfields of Appalachia. In central and northern West Virginia, southwest Virginia, southern Tennessee, and northern Alabama, our study found evidence of acquisition and consolidation of mineral resource control and the beginnings of coal development. In some counties (like Randolph in West Virginia and Walker and Tuscaloosa in Alabama), coal mining has been taking place in the past in conjunction with other forms of economic development (mainly agriculture). The impacts of past coal development have been mitigated by these counties' diversified local economies. The new scale of developments in these areas is likely to change their economic base (through restricting agricultural use of land, for example), and thus may intensify the impacts of energy development. In other counties (like Scott County, Virginia, Dekalb County, Alabama) coal mining has been barely existent and the impacts which accelerating leasing and buying of minerals will bring are new, though perhaps not welcome.

Our study found that the pattern of absentee ownership and control of mineral rights which has long characterized Central Appalachia is now extending into these fringe areas. The big oil companies are playing a significant role in the new wave of leasing and purchasing activity there.

> In Braxton, Nicholas and Webster counties, West Virginia, Sun Energy Corporation of Pennsylvania (tenth largest oil company in the U. S.) has purchased 30,000 acres of mineral rights.[10]
>
> Exxon has made extensive purchases of minerals in central West Virginia counties through its subsidiary, Carter Oil. It has also leased a reported 100,000 acres of mineral rights in Braxton, Nicholas and Clay counties.[11]
>
> In Randolph County, West Virginia, Amax, a diversified energy and minerals company, has leased thousands of acres of mineral rights from the McMullen family.[12]
>
> Other large energy corporations, like Mobil, Occidental Petroleum and DLM (a subsidiary of General Energy Corporation of Lexington, Kentucky) hold extensive leases of coal in central West Virginia.[13]
>
> In Scott County, Virginia, a traditionally agricultural county with a pattern of mainly small landownership, much rumored coal speculation is apparently taking place, although little hard information could be found in the county's deedbooks. Consolidation Coal Company (subsidiary of Continental Oil) is apparently leasing many acres of minerals and is planning a new deep mine at Dungannon, but is keeping its plans well out of the public eye.[14] Virginia Iron,

> Coal and Coke, now owned by American Natural Resources, Inc., owns over 1,500 acres of mineral rights in Scott County, and ANR is involved in plans for a synthetic fuel plant at either Dungannon or Mendota.[15]

In Tennessee, the southern Cumberland Plateau is the main area of new coal speculation. While some coal mining has taken place in the past in this area, it appears that new scale developments may soon affect it.

> Plans by Amax to develop a 10,000 acre strip mine around Piney, in Sequatchie County, were shelved after much public protest in 1976, but residents are not convinced that they have been dropped. When the coal market picks up they expect to see further attempts to strip mine their coal.[16]
>
> Gulf Resources and Chemical Corporation of Houston, Texas, has leased more than 5,000 acres in the eastern part of Cumberland county, and adjoining acreage in Roane and Morgan counties, for large-scale development. Their 1977 Annual Report states "the location is favorable with respect to possible barge shipments to Europe and Japan." The Tennessee-Tombigbee Waterway, under development by the Corps of Engineers, would presumably be the route for such shipments, and it appears that the waterway will play a significant part in the development of southern Tennessee's coal reserves.[17]
>
> In northern Alabama, agricultural counties also along the Tennessee River like Dekalb and Marshall are also seeing coal speculation occurring. According to the Dekalb County probate judge, in the last three years there has been a significant amount of mineral buying and leasing, and simultaneously, an increase in strip mining for coal in the county.[18]
>
> The Tennessee-Tombigbee Waterway may also have a role in the development of lignite resources further south in Alabama and Mississippi for possible lignite development. Phillips Petroleum is the leading company in this leasing, with other big oil companies like Continental Oil also involved. Proposals have been made for synthetic fuel plants in the area, using lignite as a feedstock.[19]

With the expansion of absentee and corporate control of minerals into these new areas, it is likely that the "Appalachian Experience" of coal development will spread into formerly agricultural counties, leading to great changes in land ownership and land use patterns (See discussion in Chapter VI on Land Ownership and Agriculture).

New Importance of Oil and Gas

When looking at mineral rights speculation in Appalachia, one can no longer look only at coal. The Eastern Overthrust Belt, running northeastwards from Alabama through Pennsylvania and into New York, is fast becoming one of the country' hottest prospects for oil and gas. The latest energy crisis, combined with some big finds (Columbia Gas Systems brought in one of the biggest natural gas test wells ever in Mineral County, West Virginia in 1979; oil strikes have recently been made in Tennessee, Kentucky and Virginia) to spark a new wave of oil and gas rights leasing across the region. While in the early stages of a "gold-rush" like this it is common to find a number of individual entrepreneurs and independent operators active, big oil and gas companies have extensive leasing of oil and gas rights in the area, and are actively expanding and consolidating their holdings. Standard Oil of Indiana (Amoco), for example, is reported by the Wall Street Journal to have 2.75 million acres of oil and gas rights in the Eastern Overthrust Belt, and has spent $25-30 million in leasing land and doing seismic tests.[20] Exxon Corporation has drilled several dry wells in Hardy County, West Virginia; Columbia Gas, which holds 348,777 acres of mineral rights in our survey counties of West Virginia, has drilled several wells in addition to its big strike of 1979. Gulf Oil Corporation and Atlantic Richfield Company have agreed to a joint venture to explore 1.2 million acres in the Appalachian Basin. Arco will spend up to $26 million. Gulf is contributing most of the acreage. In Scott and Wise counties, Virginia, Penn Virginia Corporation, an independent drilling concern from Philadelphia, has said that it and other companies will drill 260 wells on more than 132,000 acres.[21] While in east Tennessee it is still possible for small independent operators to sink a well and hit it rich, the game is mainly and increasingly in the hands of the big companies that have the capital resources to do the seismic exploration, test wells, pipelines and the rest, and to withstand a succession of dry holes.[22]

The Eastern Overthrust Belt is only in part synonymous with the coalfields of Appalachia. In much of Virginia and West Virginia, drilling for oil and gas is taking place in areas outside the coalfields, which have been removed from the impacts of energy development in the past.

New Minerals Are Assuming Importance

The search for national independence is not confined to coal and oil, or even to energy resources generally. In Appalachia, new minerals are beginning to assume importance. Uranium is the one most obviously connected with the energy crisis, but other metals are beginning to be found and developed in the region. These may afford other industries independence from the increasingly complex political implications of resource extraction from Third World countries. OPEC is the most successful example of a Third World cartel to control Western access to scarce natural resources, but others have been attempted. Metals such as bauxite, chromium and copper which once were both cheap and readily available are beginning to involve multi-national corporations in political and economic costs they do not care to incur. In this world context, any "home" sources of such minerals may provide an independent supply which can be valuable to U. S. corporations.

The mountains of western North Carolina and southwestern Virginia are important areas in the search for new minerals. Uranium exploration is currently taking place in national forest land around Grandfather Mountain in Avery County, North Carolina, and in the Devil's Fork area of the Jefferson National Forest in southwest Virginia. A survey by two University of North Carolina geology professors pointed to several areas of uranium deposits in the East, of which the most extensive run along the granite chain of the Appalachian mountains.[23] They have predicted that within the next ten years, uranium mining will begin in one or more of these locations. So far, the country's experience with uranium mining in the West does not suggest that this new development for Appalachia will be entirely welcome. Strip mining is the most common method of extraction of the uranium-bearing deposits and the devastating effects this mining method can have on the land and water in Appalachia's steep terrain are already known. Milling of the ore to extract the uranium from the rock involves crushing it to a fine powder then mixing it with sulfuric acid. Large volumes of wastes are entailed with this milling process, wastes which emit radioactivity for many years as one radionuclide decays into another.[24] Dusts from the piles of waste "tailings"in the West are carried for many miles on the winds, contaminating water, plant and animal life. In Appalachia, the denser human population means more people will be exposed to contamination from such sources unless the operations are very strictly controlled. Rainwater may leach radioactive elements such as radium and thorium from the waste piles, contaminating surface and ground water supplies.

Another mineral whose exploitation is beginning in parts of Appalachia is bauxite. One company in particular, Gibbsite of New York, has been trying to mine bauxite here for ten years.[25] It bought up mineral leases for an estimated 15,000 acres in Ashe, Alleghany, Surry and Wilkes counties in North Carolina, and Grayson and Carroll counties in Virginia, before public outcry over its plans for surface mining of bauxite made it shift its test mining to another location. Recently the company announced new plans for bauxite mining and ore processing in Grayson County, Virginia, despite public protest. Bauxite is used in the manufacture of aluminum, and supplies on the international market are becoming increasingly uncertain with political instability in Central America and the Caribbean.

In Madison County, North Carolina, we have reports of new plans for extraction of bauxite, and also such minerals as barite, used in drilling oil wells; monazite, which is associated with the radionuclides cesium and thorium; and olivine, a chromium substitute which is used in making fire brick.

Other minerals besides coal have always been mined on a relatively small scale in parts of Appalachia. Zinc, manganese, feldspar and mica have all had local importance in various parts of the region. It appears that these are now being joined by a new wave of speculation in minerals which may become equally important in some local economies.

THE IMPACTS ON THE LAND

Changes in the ownership patterns of energy resources in Appalachia, which are summarized above, imply many new impacts on the land and water of the region. Increased coal production, and larger-scale mines, will intensify the effects of strip mining on the land and people that have already been experienced in the coalfields, and may extend these effects beyond the traditional coalfields. The conversion of coal into synthetic oil and gas will bring new environmental effects, few of which have been experienced in the region before. The extraction and processing of oil shale will also bring new impacts, mostly in areas outside the central Appalachian coalfields. And the use of the region's abundant water supplies to supplement nuclear energy, through pumped storage schemes, involves more destruction of farms and communities to meet energy demands.

The region has already witnessed conflicts between citizen and environmental groups and the coal companies. In the past ten to fifteen years, strip mining for coal has met with citizen resistance through every possible means. Our study suggests that in the future, such battles will have to be fought with new protagonists (big oil companies as well as independent coal companies, for example), over new environmental impacts (synthetic fuel plants and oil shale retorts, as well as strip mining on a larger scale than ever before), and in new areas (the fringes of the coalfields, the Knobs of Kentucky, the Blue Ridge of North Carolina, as well as in the older coalfields). The citizens' groups which seek to give local residents a voice in how their local resources are developed now face bigger battles. They face them in a national political context in which the need for energy often is given more weight than the social and environmental costs of energy development.

Strip Mining for Coal

Perhaps no issue in Central Appalachia has been more emotion-laden than strip mining. While citizens have protested by every conceivable means, from laying down in front of bulldozers to lobbying for stricter governmental regulation, strip mining has only increased throughout the coalfields. As a national energy crisis demands independence from foreign oil, even greater amounts of coal are expected to be mined.

Extent of Strip Mining in the Appalachian Region

For instance, in West Virginia, the amount of strip mined coal increased by almost 130 percent between 1960 and 1978, while deep mine production fell by 42 percent. By the end of the period, strip mined coal accounted for almost a quarter of all the coal produced in West Virginia. In eastern Kentucky, in 1960, only 13 percent of total coal production was from strip mining. By 1975, 53 percent of all coal mined in east Kentucky was strip mined. In seven of our survey counties in east Kentucky, over 70 percent of total coal production came from strip mining in 1977.[26] In Virginia, the same picture is presented: in 1978, a third of total state production of coal was strip mined, over 10 million tons.

Some counties of our survey show an even more dramatic expansion of strip mining, which has had far-reaching effects on the land and people. In Wise County, Virginia, for example, strip mining is the second largest land use in the county, after forest land. As of August 1979, over 10 percent of the total surface area in the county had already been stripped, more than 30,000 acres.

In Mingo County, West Virginia, strip mine production increased from 104,570 tons in 1960 to 413,372 tons in 1979. Martin County, Kentucky, has also experienced a dramatic increase in stripping. By 1978, some 6,126,461 tons of strip mined coal were produced in Martin County, twice as much as was deep mined.

As long as it remains economically attractive to do so, strip mining will continue at least on this scale in Central Appalachia. Indeed, current ownership and leasing patterns suggest that even more extensive tracts will be stripped. In areas like east Kentucky, some large landowners are attempting to consolidate their surface and mineral holdings in order to avoid surface owners' protests over stripping. In West Virginia, Island Creek Coal Company has announced a twenty-five year plan to strip 68,000 acres on the Mingo-Logan County line, the largest strip mine in the East. It also has initiated an 8,000 acre strip project in Upshur County. On the Cumberland Plateau of southern Tennessee, Amax announced plans in 1976 to strip mine an initial tract of 10,000 acres. Further acreage was expected to be stripped later. The plans were shelved after challenges from local citizens through Save Our Cumberland Mountains led to water quality permits being denied. However, residents suspect they have not heard the last of the plans.

Such large projects can only be contemplated because of concentrated land ownership patterns--if Island Creek or Amax had to get agreement from thousands of small landowners, they probably would never be able to start such a project. The transfer of mineral rights from small independent coal companies to large, multi-national energy companies also affects the scale of coal extraction in Appalachia. The President of Amherst Coal Company, largest of the locally-owned coal companies in West Virginia, summarized his exasperation with big oil. Referring to Exxon's multi-million dollar twin mine in Lincoln and Wayne counties, he said, "No commercial coal company would have dreamed of an expenditure like that." Big oil has undreamed-of capital available. Furthermore, the world-wide context in which it makes its decisions about development of the various energy resources it controls may make it independent of traditional considerations of labor supply, transportation costs, even market demands, which constrain independent coal companies.

Impacts on the Land

Strip mining has a number of effects upon the land when it is conducted in steep terrain. Its disruption of the land in turn affects water supplies and quality, and, through such consequences as flooding, disrupts communities. While these impacts have been widely discussed and studied elsewhere, it is important to summarize some of them here.

Erosion of the Land and Increasing Peak Flows of Streams

By denuding vegetation and eroding top soil, strip mining reduces the capacity of the land to absorb rain water, thus increasing peak flows in streams below strip mined hillsides. Many studies have documented this effect of strip mining:

> **The Beaver Creek Study, conducted by the U. S. Geological Survey from 1956-66, monitored stream flows from two small watersheds in McCreary County, Kentucky, one of them mined, one undisturbed. Peak discharges from the mined watershed were consistently higher than from the unmined one (as much as one and a half times higher), and occurred more rapidly after rainfall.[7]

**The New River studies, conducted by the University of Tennessee gave rise to a computer model to predict the effect of strip mining upon flooding. The model predicts that a 5 per cent disturbance of the watershed will produce a 2-4 foot increase in the 100 year flood stage.[8]

**Both the Beaver Creek and New River studies show that even a small amount of land disturbance from strip mining (less than 10 percent) can greatly increase the amount of runoff and peak flow discharge during storms.

**A series of studies by the U. S. Forest Service Northeastern Experiment Station in east Kentucky comes to similar conclusions--"Peak flow rates increased by a factor of 3 to 5 after surface mining. Lag time was reduced, thus effecting an increase in the rate at which flood peaks move downstream. It appears that peak flow is directly and positively correlated with the percent of area disturbed during surface mining."[9]

**The one study that has been seized upon by the coal industry as apparently vindicating strip mining is subject to question. U. S. Forest Service engineer Willie Curtis issued a report in 1977 which compared 50 percent mined and undisturbed watersheds in Breathitt County, Kentucky and Raleigh County, West Virginia.[30] He found that peak flows after the storm of April 4-5, 1977, had been higher in the undisturbed watersheds. Curtis suggested that a "sand-dune" effect may be operating, such that extremely disturbed land may hold large quantities of water in its broken-up rock. It has not been established that the sand-dune effect will occur in all cases of extreme devastation, or that it can be maintained over time as disturbed land settles and the spaces for water storage are reduced.[31] And the sand-dune effect probably does not operate in the more common situations where a smaller proportion of a watershed have been stripped.

Curtis' arguments raise another specter: if strip mine spoil retains large amounts of water, it is also subject to the stress of that great weight. Where slopes are steep, landslides could result, with even greater devastation of downstream areas. It is for this reason that strip mine regulations seek to ensure that water does not seep into replaced overburden. But in their turn, these regulations imply increased runoff--a Catch-22 situation.

Erosion of Soil and Sedimentation of Streams

Strip mining erodes soil and hence contributes to increased sedimentation of streams. As creeks and rivers silt up, their carrying capacity is reduced and their likelihood of flooding is increased. Again, many studies document the connection between strip mining and increased sedimentation.

> **EPA estimated that for a certain degree of slope, active strip mines yield 2,000 times as much sediment as forest land of similar size and character.[12]
>
> **The Stanford Research Institute report on Surface Coal Mining in West Virginia found in areas with generally steeper slopes and greater natural sedimentation, that suspended sediment in strip mines watersheds is more than 1,000 times that in similar drainage basins where there has been no significant mining.[33]
>
> **Both the Beaver Creek and U. S. Forest Service studies in Breathitt County,Kentucky, similarly found a clear relationship between strip mining and sedimentation.[34]
>
> **The U. S. Geological Survey and Army Corps of Engineers studies to determine the reasons for excessive sedimentation of Fishtrap Lake in east Kentucky characterized strip mining as the major contributor of unanticipated sediment.[35]

These scientific studies now confirm what Central Appalachian residents have known for many years. Strip mining causes significant damage to the land and in turn contributes to the frequency and severity of flooding. The Kentucky Department of Natural Resources report on the 1977 flood concludes:

> Considering all the information on the effects of surface mining on runoff and erosion, small tributaries with a high percentage of recently disturbed land probably had a significantly higher flood level as a result of the surface mining.[36]

Devastating effects of the flooding which has taken place in Appalachia in recent years following the strip mine disturbance of the land were found in many communities we studied. In Mingo County, West Virginia, for example, the highest flood in the history of the Tug Fork River occurred in April 1977. According to a Corps of Engineers report, total assessable damage done by the flood was approximately $200 million. More than 4,700 homes and 670 businesses were damaged. Six hundred homes were totally destroyed. Over 200 miles of highways and railroads were washed out.[37] By some miracle, no one was killed in the flood itself, although the shock, fear and grief of the flood, and the strain of losing homes and belongings, took their toll after the flood, especially on older people. In addition to the direct physical losses, businesses in the area were closed for an extended period of time. Loss of sales and output was estimated at close to $11 million, and business losses resulting from the temporary closing of coal mines exceeded $30 million.

Flooding in the valley of the Tug Fork watershed has increased steadily both in frequency and height during the last thirty years, according to a report by the Tug Valley Recovery Center. Strip mining for coal in the valley has increased at a parallel rate and volume during that same period, while the average rainfall and the severity of storm events for the Tug Fork Basin area has remained constant.[38]

Elsewhere in Appalachia, areas which had never before had major floods began to be flooded after strip mining commenced in their watersheds. The Camp Creek area of Pike County, Kentucky, for example, was devastated by floods in June 1979, although the area had never before had a major flood. Seven houses were washed downstream, one with two women inside. Heavy strip mining had begun on the head of the creek in 1975, and by 1979 the upper sections of the watershed had been completely strip mined. While residents of Camp Creek had little hesitation in connecting this strip mining with their flood, government representatives denied any connection.

> My dad's 85 years old, and if his father were alive he'd be 125 and they've lived in this hollow all their lives. There's never been anything like this in this hollow for 125 years.... The strip mines are just about two miles on up past us.... They don't care, just that lump of coal.

Not only has flooding become more frequent, higher and more extensive since the advent of large-scale strip mining, but its effects are more destructiv The regular flooding of bottom land which used to happen enriched the soil by adding fertile silt. Now flooding deposits clay and acid materials from strip mine operations, destroying agricultural land. As Becky Simpson, a resident of Cranks Creek, one of the most flooded areas of Harlan County, says, "Folks can't raise a garden and they can't farm any more because clay mud has washed over the soil."

Coal mining's other impacts on the land and environment include its effects on water. Both deep and strip mining create acid drainage, which can destroy fish life in streams and makes water unfit for drinking. Acid mine drainage is formed when toxic materials, generally pyritic minerals, are exposed to air and water. The pyrites are altered by oxidation to soluble sulfuric and iron compounds.[39] These salts dissolve in water to form sulfuric acid; and this in turn dissolves other minerals exposed by mining operations, such as nickel, aluminum, manganese. Some of these are toxic, others carcinogenic.

Appalachian coalfield streams are extensively degraded by mining practices. As energy development in the region expands, the problems may become even more severe.

**According to the 1978 Kentucky Water Quality Report to Congress, the entire eastern Kentucky region is plagued by low water quality, "indicative of the coal mining which takes place in the area." Pike County was found to be one of the worst affected--indeed, in a county twice the size of other east Kentucky counties, the Nature Reserves Commission was unable to find a single site suitable for a nature reserve.[40]

**A recent TVA survey shows the Powell River, running from southwest Virginia to the Norris Lake, to have "the most critical water quality problem in the (Tennessee) Valley, resulting from mining activities."[41]

**On the Cumberland Plateau in Tennessee, an area where strip mining for coal is likely to increase in coming years, a number of major streams have already been affected by acid mine drainage and sedimentation from strip mines. The"Plateau Muskie", an endangered fish species, has been all but destroyed in its once primary spawning grounds there.

**Wise County, one of the most heavily stripped counties in Central Appalachia suffers the consequences in polluted streams and rivers. The LENOWISCO 208 Water Quality Study concluded that surface mining, both active and unreclaimed, is one of the major contributors to "non-point source" pollution in streams of the area.[42]

Strip mining can affect the availability of water supplies, as well as their quality. Disruption of upper level aquifers on the Cumberland Plateau has already affected the wells of residents near strip mine operations, and may serve to lower the water table for years to come. Residents of Walker County and Dekalb County, Alabama, have also reported loss of domestic wells due to nearby strip mining. In such cases, drinking water may be completely denied local residents, as strip mining damages both surface and ground water.

Central Appalachian residents have now had enough experience with strip mining for coal to be well aware of its destructive effects. Lorraine Slone, a member of Concerned Citizens of Martin County (Kentucky), told us:

> The earth was made to live on... now, however, it is being destroyed in order to enrich the few at the expense of the many. The air and water are being filled with dust and chemicals, and the land is being ravaged by strip mining. Strip mining has driven off game and wildlife, has filled the streams with silt, and has increased water run-off on the hillsides, thereby increasing flooding. If this is kept up, there won't be a Martin County to worry about in twenty years."

Regulations and the Future

The ill effects of strip mining on land and water have been widely acknowledged for some time, and gave rise to the 1976 federal strip mine legislation to regulate strip mine operations. However, the negative impacts of strip mining have not disappeared with the passage of this legislation. And, the legacies of past practices remain. "Orphan land"--unreclaimed strip mining--is widespread across Appalachia, and continues to wreak havoc with streams, fish life, and communities downstream. Public money is now being assigned to try to limit the damages caused by orphan lands, the sites of private profit.

> **In Mingo County, West Virginia, about 7 percent of the county has been stripped, only about half of which has been revegetated.
>
> **In Walker County, Alabama, much of the land mined before the federal act remains without seeding or grading. Unreclaimed land reputedly stretched "from one end of the county to the other."
>
> **In Virginia, about 24,000 acres were stripped before the passage of the state's surface mining law in 1966.

Nor is it certain that strip mining currently taking place under the aegis of the strip mine law will have no deleterious effects on the land or water. Indeed, as the Tug Valley Recovery Center points out "it is a virtual certainty that strip mining in steep slope areas will continue to result in hydrologic damage."[43] The federal regulations fail to address adequately some critical aspects of strip mining, including drainage control. And they do not consider the cumulative effects of stripping on a whole watershed. Furthermore, given the history of the industry's practices, it is unrealistic to expect companies voluntarily to comply with the new regulations. And the resources of the Office of Surface Mining to inspect sites on a continuing basis are quite inadequate.

Finally, there is a loophole in the federal law expressly designed to favor large-scale stripping operations. While strip mining along mountainsides is required to return the land to its original contour, removal of entire mountaintops is allowed. Only the large energy companies have the capital resources. equipment and expertise to level an entire mountain--and they are increasingly the ones with the land.

SYNTHETIC FUEL DEVELOPMENT

Plans for a national energy independence from imported oil include increased coal production not only for direct use of coal but also for conversion to synthetic liquid or gas fuel. While it appears that the main thrust of synthetic fuel development will be in the West, where coal is cheaper, Appalachia will also have a role to play. Even a minor proportion of an $88 billion federal program will be a significant development for the region. Already plans have been announced for a number of sites in the Appalachian coalfields, and more are likely to follow. The impacts of such plants on communities and the environment are not yet fully researched, but are likely to be substantial.

Location of Synfuel Plants

As federal dollars begin to become available under the new Synfuels Corporation, for feasibility studies, pilot and demonstration plants, and for financing commercial development, we may expect to see many more proposals for Appalachian sites. Already, plans have been announced and are underway to place synfuel plants in a number of the counties in our study:

> **In Marshall County, Alabama, TVA has plans for a medium Btu gasification plant to supply up to one third of the enrgy needs of Tennessee Valley industry. The plant will produce the equivalent of 50,000 barrels of oil a day, using 20,000 tons of coal a day. Costs are expected to be in the $1-2 billion range, and construction is due to be completed in 1989.
>
> **In Pike County, Kentucky, a low Btu gasification plant is under construction, financed in part by the local government, in part by state, federal and ARC funds. It will serve an industrial complex that has yet to be built, and a housing complex. The project has been beset by cost overuns and delays, as environmental controls have had to be added along the way.
>
> **In Scott County, Virginia, Dynalectron Inc. has preliminary plans for a liquefaction plant using the H-Coal process, to be sited in Dungannon or Mendota. The plant would process around 22,000 tons of coal a day, and would be a full-scale commercial version of the pilot now being run by Ashland Oil in Catlettsburg, Kentucky. Federal funds for a feasibility study have been applied for.
>
> **In Wise County, Virginia, local officials have been lobbying hard for a synfuel plant to be located in the county, with a 628 acre site in St. Paul on the Clinch River earmarked for the project. As yet no definite plans have been secured.
>
> **In Campbell County, Tennessee, Koppers Company, a major landowner identified in our study, has plans for a commercial scale liquefaction plant to produce unleaded gasoline. In the final stage of development, up to six units would operate at the site, each producing the equivalent of 10,000 barrels per day. Some form of federal financing of the plant is expected, and a federal grant for a feasibility study of the Campbell County site and an Anderson County site has recently been awarded.

It may be expected that these proposals are only the beginning of a flood of synfuel development in Appalachia. As a Dynalectron Inc. spokesman, William R. Dowling, has said, "The time is right for development of synthetic fuels, and we are proceeding hell-bent-for-leather on the projects."[44]

The impacts of large-scale synthetic fuel development on the land and environment of Appalachia will not only come from the greatly increased strip mining of coal to supply the plants--although this will be a significant impact. Synthetic fuel plants themselves are expected to involve deleterious effects through toxic wastes and emission to air and water of toxic materials. They may constitute a serious health hazard to workers and to residents in neighboring communities.

Impacts on the Land and Environment

Assessing the environmental impacts of a full-scale synfuels industry, and especially the consequences for human health, is speculative, for there are no commercial scale or even demonstration plants which have been adequately studied to serve as a model. As the Department of Energy points out:

> First, the nature and quantities of toxic pollutants discharged to air and water or existing in the workplace or products must be estimated from fragmentary evidence;
>
> Second, the levels of pollutants must be related to the number and severity of health effects through highly speculative models and sparse data from experiments whose relevance is questionable."[45]

In the context of such lack of knowledge as to the safety of synfuels plants, one would expect the conservative approach to prevail, and slow and careful development to take place in order to avoid disastrous and unforeseeable impacts. However, the "energy crisis" and push for energy independence have prevailed over the voice of caution, and research on the environmental impacts of the plants will have to take place with live "guinea pigs"--workers and residents of neighboring communities.

Enough evidence now exists to suggest that impacts on the environment and on human health are possible, indeed likely, from a synfuels industry (see DoE report cited above). The plants will have impacts on land, water and air, and through their emissions and final product, may affect the health of workers, neighboring residents, and consumers.

Land

Synfuel plants will require large amounts of land for the plant site, for mining operations, and for disposal of immense quantities of solid waste. Indeed their land requirements may constitute a restriction on siting in Appalachia, where the necessary flat land for a plant site is in short supply. The DoE siting study referred to above suggests that average plant site needs for liquefaction plants range from 450 acres to 650 acres. The proposed Dungannon, Virginia, site is 470 acres, with a large additional area required for a buffer zone. The Campbell County site for the Koppers Company development is 1,600 acres; the TVA site in Marshall County, Alabama, 1,100 acres. In some circumstances where flat land is scarce, the large amounts needed for a synfuel plant would serve to deny the possibility of other industrial development in the community, including industrial development that would supply more jobs than the highly capital intensive synfuel industry.

A further large area would be required to dispose of the solid wastes from a commercial scale synfuel plant. The DoE has estimated solid waste generation from typical liquefaction technologies to be around 70 tons per hour--one railroad car full of waste every hour the plant operates (and they are expected to operate about 80 percent of the time). Disposal of such waste in a safe manner presents problems, since it consists mainly of ash and sludge which contain trace amounts of a wide variety of toxic and carcinogenic materials. Leaching of such materials would contaminate water supplies and render them unfit for drinking. Accordingly, landfills for the waste must be safeguarded from runoff, and leachate must be collected and disposed of separately. In many Appalachian communities, the danger of contamination from solid wastes of this kind would only add to already polluted water supplies from strip and deep mining.

Water

All the synfuel processes consume large amounts of water. The hydrogen atoms of the water molecule are combined with the carbon of the coal to form the synthetic oil or gas. The DoE study estimates water needs of various liquefaction technologies to range from 6,000 to 9,000 gallons per minute (averaging 19 cubic feet per second). Gasification technologies require large amounts of water for cooling purposes, and consume three to five times as much water as the liquefaction processes. The ready availability of large amounts of water is considered to be one of the main attractions of the Appalachian region for synfuel development.

However, the large amounts required by synfuel plants may have significant impacts on supply at certain sites For example the Clinch River sites proposed for Scott and Wise counties, Virginia, may experience substantial losses of flow at certain times from the demands of a synfuel plant. The Clinch River in that area runs as low as 25 million gallons per day in times of drought (with an average low flow in summer of 40 million gallons per day).[46] Synfuel plants can consume 15 million gallons per day, or more, depending on the technology. Over half the flow of the Clinch River could thus be used up by a synfuel plant, severely reducing the availability of water to other users (including the expected population increase from the plant itself).

Synfuel plants may also have a significant impact on the quality of the Region's water. Liquid wastes from a synfuel plant would be likely to include such pollutants as phenols, polycyclic aromatic hydrocarbons (PAH), trace metals and radionuclides. Possible health effects include cancers, liver damage, mutagenic effects and central nervous system damage.

The effects of synfuel plant discharges may exacerbate the problems already experienced in certain parts of the region from strip mine and deep mine pollution. The DoE study found several river systems in our area to be problematic for synfuel siting because of existing water quality concerns, including the Tug Fork along the Kentucky/West Virginia border, the Kanawha in West Virginia, the Licking, Kentucky and Cumberland rivers in eastern Kentucky. More localized problems may also exist at other sites. However, the pressures in favor of synthetic fuel development are now so strong that they may override objections made on the basis of water quality.

Other impacts of the synfuel industry which are of concern to Appalachian residents include air pollution, and occupational health questions.[47] As with strip mining for coal, the benefits in jobs and profits favor a few, but the costs will affect many. Synthetic fuel processing is a capital intensive industry, like the petrochemical industry, and relatively few jobs will be forthcoming for the money (including taxpayers' dollars), land and other resources poured into these projects. Most commercial sized plants, costing in the region of $1-2 billion will require only a few hundred workers to run them. Construction crews numbering several thousand will descend upon the chosen community for four or five years, causing a temporary boom-town effect, then leave. Many of the permanent jobs will be highly skilled, and relatively few are likely to be open to local people. What local people will receive is the brunt of the air pollution, water pollution, land pollution. And when the plant has reached the end of its allotted life span (as little as twenty years), the local community gets to pick up the pieces.

OIL SHALE

Included within the general rubric of "synthetic fuels," though not deriving from coal, oil from shale is considered one of the most promising new technologies to meet the energy crisis. Until recently, interest was almost entirely in the West, but new exploration of oil shale deposits in the East, together with new technical developments for extracting oil from eastern Devonian deposits, have given oil shale a significant potential for development in the East.

Location of Oil Shale Developments

The Institute of Gas Technology estimates that the eastern U. S. has some 420 billion barrels of oil in easily accessible shale formations.[48] One hundred ninety billion barrels of this are estimated to be in Kentucky, in a 2,650 square mile crescent east, south, and west of the Bluegrass region. Oil shale is also located in West Virginia and Tennessee.

The DoE has initiated an Eastern Gas Shale Project, based in Morgantown, West Virginia, which is surveying for shale deposits in West Virginia, Ohio, Pennsylvania and Kentucky. The survey is scheduled to be completed in 1983, at which point the federal government expects to turn the fields over to industry for full-scale commercial exploration. In addition, the DoE's regional office in Atlanta has applied for funds for a "full-blown resource assessment" of Tennessee's shale deposits.[49]

Such government interest is matched by private commercial interest. Woodstock Minerals Inc. of Los Angeles has been seeking lands for shale development in Alabama and Tennessee. In Kentucky, the publicity surrounding the Addington brothers' leasing of oil shale has brought the issue to public attention for the first time. After selling their east Kentucky coal business to Ashland Oil for a reported $113 million, one Addington brother, Robert, started leasing for oil shale in the Knobs area of northeastern Kentucky, under the name of the Pyramid Minerals Company; and the other brother, Larry, started leasing in central and south-central Kentucky under the Addington Oil Company. After the latter company had obtained leases to tens of thousands of acres, area residents began to protest fraud. They had been told that the leases would not permit strip mining, while in fact they allowed "any conventional method;" and they maintained they had been told that the leases were like the two year oil leases they were used to, which required renewal, while in fact they were perpetual leases. After continued protests, and the threat of a suit by the state Attorney-General, Addington Oil Company agreed to renegotiate or cancel leases. By mid-summer 1980, 76 percent of the lessors had cancelled their leases, while others renegotiated terms. A few retained the original leases.[50]

Despite the slowing of leasing while this was going on, oil shale is still under active consideration in Kentucky. Recently, there have been reports that Breckinridge Minerals, a subsidiary of Southern Pacific Petroleum of Sydney, Australia, has leased more than 10,000 acres of oil shale land in both Menifee and Montgomery counties.[51] However, the state legislature has placed a moratorium on large-scale oil shale projects (involving over 5 acres) until draft regulations for oil shale mining are ready in July 1981.[52] Small-scale projects may continue, but must meet state registration guidelines.

Impacts

Shale oil extraction involves significant environmental impacts, both on land, air and water. Two main technologies are being developed for its extraction: surface processing which involves mining of the shale rock, processing at high temperatures in a retort, and disposal of the large quantities of solid waste generated, and "in situ" or underground extraction, which involves heating the shale while still in place underground, and piping up the extracted oil to the surface. Above ground techniques for shale oil extraction have been developed for some time, but have not been commercially viable or tested until now. Underground techniques have been developed mainly by Occidental Petroleum in the West, and are still some way from commercial stage.[53]

Surface extraction of oil from shale requires strip mining of the rock, with all the known environmental problems to land and water created by this method of mining coal. The rock would then be taken to a retort, creating potential dust and air pollution problems. It would be heated to 900 degrees to release the kerogen, which then would most likely need to be refined further in a conventional oil refinery to provide fuel. Much water would be consumed in the process--some three to seven barrels of water for each barrel of oil produced. In the West, restrictions on the availability of water may place a ceiling on oil shale development, and even in the East, demands for water by an oil shale industry would be significant.

Water pollution problems may be serious. Spent shale contains salts, including potentially toxic metals like boron, fluoride and molybdenum, which could leach from waste storage areas and contaminate surface and ground water supplies.

Underground retorting of shale may avoid some of the other environmental effects, but could potentially damage ground water supplies.

Impacts on the land from surface processing of shale to extract the oil include a significant waste disposal problem. About one ton of rock yields a barrel of oil, and the heating creates a "popcorn effect" so that the spent shale is larger in volume than the mined rock. In the West, it has been seriously suggested that a few unused canyons could be filled up and levelled with spent shale. In the East, disposal of the waste may be even more difficult, since the land is more densely populated. Wherever the site is, methods must be found to seal it so that leaching from the shale cannot take place.

Most of the environmental questions surrounding shale oil cannot be answered at the current level of technical knowledge. Environmental controls that work in the laboratory or in pilot plants may not meet the needs of commercial sized facilities. To push ahead too fast with commercial development of untried and untested methods could have disastrous effects on the land and water of Appalachia.

Oil and Gas Leasing

As oil and gas prices rise, it becomes economically feasible to seek oil and gas in areas which had aroused little exploratory interest when prices were low and extraction costs high. Following the 1973 "oil crisis" there was a flurry of speculative oil and gas drilling in Appalachia, and again in the last two years we have seen a bustle of activity. In the so-called "Appalachian basin," there is potential both for shallow-drilled oil and gas wells and for very deep wells, a mile or more beneath the surface

Locations

Currently there are producing oil and gas wells in parts of southwest Virginia (Lee County), east Kentucky (Letcher County produced over 220,000 barrels of oil in 1978) and east Tennessee (a total of 311 wells producing oil in Morgan, Scott and Fentress counties). But the current picture of oil production is but a miniature of future prospects in the region. In the last couple of years, exploration and leasing for oil and gas has extended from those counties which have long been known as potential producers into largely agricultural counties where oil and gas leasing is a novelty. In Cocke County, Tennessee, for example, on the North Carolina line, there were only twelve oil and gas leases recorded in 1979; so far in 1980 there have been about 600. As much as 10 million acres may already have been leased in Appalachia, according to the New York Times,[54] and major oil companies like Exxon, Gulf Oil and Standard of Indiana (Amoco) have an appreciable interest.

One reason for the increased interest in Appalachian oil is that returns on drilling investment, although modest, are more assured than in other areas. While in Texas, only 66 percent of wells drilled come up with commercially viable amounts of hydrocarbons, and in Kansas the proportion is 54 percent, 90 percent of wells drilled in Ohio, Pennsylvania and West Virginia produce. A typical well will pay back its cost in 3-4 years, and return three times its initial investment in 15 years.

In Tennessee, however, the picture is very different. Less than half the wells drilled come in, but a well can pay back its cost in as little as a week. There is also more unexplored acreage in Tennessee than in other Appalachian states, which is now attracting many "wildcatters" (operators who drill wells more than a mile from existing producing wells), independent operators and investors looking for a gamble. Six hundred wells were drilled in Tennessee in 1979, a record for the state. More would be drilled if more gas pipelines were constructed to transport the gas which is often found in concert with oil.

There are now estimated to be some 5 million acres of oil and gas rights under lease in Tennessee. Phillips Petroleum alone has leased 123,000 acres in east Tennessee. Other big oil companies also have substantial leases. While Scott, Morgan and Fentress counties are the main boom areas for exploration, leasing is also taking place further south, in Cumberland County and in counties east of Knoxville--Jefferson and Cocke counties in particular.

In Virginia there has been a similar increase in leasing of oil and gas rights in recent years, although little new drilling is taking place as yet. According to the Virginia Department of Labor and Industry, total acreage under lease at the end of 1979 was over 3 million acres, an increase of 68 percent from the previous year.[55] Six major oil companies--Amoco, Columbia Gas, Gulf Oil, Philadelphia Oil, Exxon and Chevron--lease 79 percent of these acres. The potential oil and gas area extends from Lee County in the far southwest corner of the state, northeastwards as far as Frederick County in the upper end of the Shenandoah Valley.

While West Virginia has a long history of oil and gas production, recent years have seen a surge in exploration and leasing of oil and gas rights. Again, the oil and gas companies have been active in the area: Columbia Gas is extending its leasing; Consolidated Natural Gas has extensive leasing in the eastern panhandle; Exxon has drilled a number of dry wells in recent years, and has a "significant lease position" in West Virginia through its subsidiary, Carter Oil.

Amoco also has some dry holes and is doing seismic research in the area. Much of the new leasing and exploration is taking place in the north central and northeastern parts of the state. In the Alleghany Highlands area, it is taking place in primarily agricultural counties which have not previously known the effects of energy development.

Western North Carolina is another area that in the past has been outside the energy development zones of Appalachia, but through oil and gas exploration and leasing is now being drawn into energy development. The concealed part of the Eastern Overthrust Belt, which runs through Georgia, western North Carolina and up into Virginia, may have potential for yielding oil and gas through deep drilling (maybe a mile or more below the surface). The U. S. Forest Service has recently reported significant oil and gas leasing under National Forest land in western North Carolina.[56]

Amoco has leased 122,000 acres in Cherokee, Clay, Graham, and Transylvania counties, and Weaver Gas and Oil Corporation of Houston has leased 120,000 acres in Cherokee, Graham, Madison and Swain counties. So far the interest has been aroused from shock-wave soundings: exploratory drilling is not expected to take place for several years.

Throughout Appalachia, then, both in traditional energy counties which have witnessed coal extraction for many years, and in mainly agricultural and forested counties which have been far removed from energy developments in the past, oil and gas leasing and exploration are beginning to reach public notice. However, in most of these areas, actual drilling for oil and gas has not yet been experienced, and there is little public awareness of the potential effects of oil and gas extraction on the land and water.

Impacts

Oil and gas extraction is not normally regarded in Appalachia as being environmentally damaging, for few people have experienced it at first hand. However, as exploratory and commercial drilling is beginning to spread, residents are starting to encounter some of the possible ill effects on their land. One Randolph County, West Virginia, farmer found his pasture damaged with core holes, his road and fence destroyed. After one of his cows died from drinking water contaminated by runoff from drilling sites, he has been forced to sell the rest of his livestock. A similar experience has been reported from neighboring Barbour County. One property owner was given only a day's notice that drilling for gas was about to start; his fence and fruit tree were torn down and a road bulldozed through his woods, destroying valuable timber. His farm pond was used as a water source for drilling operations, killing its fish. The county road leading to his farm was severely damaged.

Residents of Lincoln County, West Virginia, have also reported some of the ill effects of oil and gas drilling. A consortium of Pennzoil, Exxon, Columbia Gas and Guyan Oil has initiated a project in the county, using water flooding and carbon dioxide gas under pressure for secondary extraction of oil from old wells. Preliminary work on 90 acres, before the consortium was sued for operating under federal funds without submitting an environmental impact statement, resulted in ruined well water, polluted streams, torn up roads and destroyed farm land.

Elsewhere in West Virginia, and in other areas where gas has been found, fires from gas wells have created a nuisance, air pollution and a potential danger to nearby homes. In the populated East, in contrast to the West, oil and gas wells have to coexist with communities, farms and forests, and many more safeguards may be needed to ensure minimum damage to the land and environment.

Pumped Storage Facilities

Coal and water have been traditional keys to Appalachia's energy development. The Tennessee Valley Authority was founded in the Depression on the basis of power generation through hydroelectric schemes (to be meshed with flood control and recreation provision), and only subsequently extended into coal-fired and nuclear power generation. Dams for electricity generation have been combined with dams for flood control to harness just about every river system in Appalachia. And recently a new use of water for energy production has been proposed, and met with stiff citizen opposition.

Locations

Controversy over pumped storage facilities has been most pronounced in southwest Virginia, although there was an earlier proposal which caused conflict in West Virginia. Appalachian Electric Power Company, a subsidiary of the American Electric Company, has proposed a series of pumped storage facilities in Virginia.[57] These would serve as giant storage "batteries" for electricity. At night, when power demand is low, surplus electricity would be used to pump water uphill from a lower lake to a higher one. In the day, when power demand increases, the water would be run back downhill through turbines to generate electricity. Any such scheme is inefficient, requiring about 4 kilowatts of electricity to pump uphill enough water to generate 3 kilowatts on its downhill run. And pumped storage schemes would mainly be useful in conjunction with nuclear power plants, which cannot be turned down at night as demand lessens, rather than with coal-fired plants which are quite flexible.

APCO began its long search for a pumped storage site on the New River in Virginia. In preparation for its Blue Ridge Impoundment Project, APCO acquired some 12,000 acres in Grayson County, much of it prime agricultural land. After years of battles on a national and local front, Congress designated that section of the New River a "wild and scenic river," and the project was stopped. APCO is now realizing substantial profits from the resale of its Grayson County acquisitions. Undaunted by its defeat over the Blue Ridge project, APCO then announced two proposals for pumped storage schemes, on Powell Mountain in Scott County, and at Brumley Gap in Washington County, Virginia. They proposed the largest pumped storage facilities in the Western Hemisphere, each capable of producing 3 million kilowatts of peaking power. Both plans have potentially significant impacts on the land and people.

Impacts

APCO's Brumley Gap proposal involved in the flooding of about 100 homes, plus churches and stores, in order to make the lower lake. "Hidden Valley," up the mountain, would hold the upper lake, flooding a state game refuge, significant Native American archaeological sites, and obliterating one of the few streams where native trout remain. At some time in each 24 hours, both lakes would be pumped dry, both eyesores, neither could support fish or wildlife.

APCO's Powell Mountain site is wilder and more remote. Most of it is within the Jefferson National Forest, parts are being studied for designation as wilderness areas, to preserve some unspoiled natural beauty in an area where increasing strip mining for coal has scarred many hillsides. Some 25 families would be flooded out by the lower lake, a hundred more would live in fear below the 300 foot earthen dam. The upper lake would take in the Big Cherry Reservoir, source of water for the town of Big Stone Gap, and render the water unfit for drinking.

Beyond the impacts of the flooding and the hydroelectric machinery on the land, there are potential ill-effects from the 765 kilovolt electric powerlines that would transport electricity to and from the sites. Extra low frequency electromagnetic waves emitted by these lines are now strongly suspected of causing such health effects as stress, increased susceptibility to disease, even cancer.[58] In some areas of the U. S., farmers have already experienced problems with grazing animals and growing crops under high voltage powerlines--crops do not mature as usual, cows have difficulty letting down their milk. Honeybees have responded to electromagnetic waves by gaining less weight, producing fewer young, and losing their ability to withstand winter cold. Mice in tests respond to low frequency radiation by signs of stress, changes in blood chemistry, and increased infant mortality over several generations.

APCO's plans for the Powell Mountain site have been dropped, after vociferous local and environmental groups opposition. However, Brumley Gap may yet see its farmlands flooded, its community destroyed and families relocated, to make way for a pumped storage facility. The formation of a coalition of concerned citizen groups--the Coalition of Appalachian Electric Consumers--resulted from opposition to APCO's plans, and the coalition continues to play a significant role in challenging the plans and policies of American Electric Power Company and its subsidiaries.

These plans, and a plan by Alleghany Power System to build a pumped storage facility in the upper Canaan Valley of Tucker County, West Virginia (the focus of environmentalists' protests[59]), raise some significant questions. The power generated would in each case be transported out of the region, to serve the peak needs of urban areas miles away. Here, as elsewhere in the region, citizens groups are asking, "What price must rural communities expect to pay in order to meet national energy demands?"

SUMMARY: Citizens' Response

During the last two decades in the Appalachian region, conflicts over the use and misuse of the land for energy development have been intense. Unchecked, unreclaimed strip mining, in particular, has provoked bitter grassroots outcry. For many local citizens, the concerns are not simply aesthetic ones. For them, strip mining destroys water supplies, endangers homes, takes away deep mining jobs, and erodes communities and a way of life. In response, to these and related grievances, a score of grassroots organizations have sprung up to voice their interest

Their efforts have been frustrated, among other things, by a deep-rooted attitude, locally and nationally, that landowners have the right to do whatever they please without public accountability, regardless of social and environmental consequences nearby. With the passage of state and national legislation on surface mining and other environmental concerns, the battle over whether regulation will occur has given way to battle about the extent of governmental regulations.

This chapter has suggested that the environmental and social impacts associated with energy development are likely to continue, and potentially, to worsen. With them, conflicts over land use are also likely to grow in tensity to involve new actors, areas and arenas.

Within the traditional coalfields, as has been seen, strip mining and other energy developments are increasingly dominated by larger corporate units, primarily multinational oil and energy firms. With the consolidation of their control, energy investments will be on a bigger scale, with far-reaching impacts. Strip mining will involve thousands of acres at a time, rather than hundreds and will affect more people and communities. At the same time, decisions about where, when and how mining is to occur will be made further away from the reach of local citizens and officials, who will have to form coalitions with other similarly affected to let their voices be heard effectively.

While conflicts over energy developments may escalate in scale in the traditional coalfields, they are also likely to extend to new areas. This expansion of energy developments into new areas of Appalachia already has provoked response of citizens and officials who are not yet as economically dependent upon the energy industry as in the older coalfield areas. In these new areas, which often have relatively dispersed land holdings, farmers, local businessmen and others have been mobilized with more numbers and with greater effectiveness than in the sectors where land ownership and economic development have been dominated by large, corporate energy owners. For example, the search for oil shale in Central Kentucky, the expansion of strip mining into Lincoln County, West Virginia, and Sequatchie and Van Buren, Tennessee, and the threat of pump storage facilities in Washington County, Virginia--all agricultural areas not previously dominated by energy producers--have been met with well-organized citizens response.

Both in the "traditional" energy fields and in the "new areas," local communities will face environmental impacts growing from new technologies, such as synthetic fuels, and from the search for new minerals, such as uranium. While some of these impacts have been outlined in this chapter, complete information on the consequences of these new energy technologies is lacking, simply because they are new in the Appalachian region. Some interests are pressing for full scale, rapid development of these energy sources. Local officials and citizens, however, more than ever before need to have a voice in this process to avoid the costly environmental and social consequences experienced with past energy "booms" in Appalachia. For their voice to be heard, government agencies, too, must recognize the right and the importance of local citizens' participation on matters related to the development and use of the land in their communities.

CHAPTER VII. OWNERSHIP, ENERGY AND THE LAND IN APPALACHIA
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CHAPTER VIII. FINDINGS AND RECOMMENDATIONS

This study has reviewed land ownership patterns in 80 counties spanning six Appalachian states and analyzed the impacts those patterns have on local development. In the process, data was collected on the ownership of over 20 million acres--13 million acres of surface land and 7 million acres of minerals. One of the most extensive studies of its kind, the analysis is based on a survey of 55,000 parcels of land, 19 county case studies and the compilation of about 100 socio-economic variables on each county surveyed. State reports analyzing land ownership and its impacts at the state level were also compiled. A combination of the survey data, case studies, aggregate socio-economic data and state reports form the basis of this study. This section summarizes the major findings of this two year effort and provide general policy recommendations for consideration by ARC, local and state officials and the general public.

Land Ownership Patterns

In general the study found ownership of land and minerals in rural Appalachia to be highly concentrated among a few absentee and corporate owners, resulting in little land actually being available or accessible to local people.

1. The ownership of land and minerals in Appalachia is highly concentrated in the hands of a few owners. Only 1 percent of the local population, along with absentee holders, corporations, and government agencies, control at least 53 percent of the total land surface in the 80 counties. Forty-one percent of the 20 million acres of land and minerals owned by 30,000 owners in the survey are held by only 50 private owners and 10 government agencies. The federal government is the single largest owner in Appalachia, holding over 2 million acres.

2. Appalachia's land and mineral resources are absentee-owned. Nearly three-fourths of the surface acreage surveyed are absentee-owned, i.e. held by out-of-county and out-of-state owners. Four-fifths of the mineral acres in the survey are absentee owned. In one quarter of the survey counties, absentee-owned land in the sample represented over one-half of the total land surface in the county. Contrary to expectations that absentee ownership would predominate only in the coal counties of central Appalachia, the study found a high level of absentee ownership throughout the 80 county survey area.

3. Large corporations dominate the ownership picture in much of Appalachia. Forty percent of the land in the sample and 70 percent of the mineral rights are owned by corporations. Forty-six of the top fifty private owners are corporations. Corporate ownership accounted for more than 50 percent of the surface acres in many counties. Some 84 percent of the corporately held acres in the survey are held by absentee corporations.

4. Little land is owned by or accessible to local people. Under one-half of the land in our sample is owned by individuals, and under one-half of that is owned by local individuals. The current ownership picture is one in which local ownership and control of land and mineral resources has been lost to absentee interests. The corporate ownership and control of land and minerals that has long dominated the heartland of central Appalachia is rapidly spreading to other parts of the region. Corporate ownership, often for energy and resource exploitation and government ownership, with associated tourism and recreation development, threaten the access people in the region have to the land and the control they exercise over its use.

5. The ownership patterns themselves tell only part of the story. The dominant ownership patterns are significant factors affecting community and economic development. These ownership patterns are a crucial underlying element in explaining patterns of land use, inadequate local tax revenues and services, lack of economic development, loss of agricultural lands, lack of sufficient housing, and the development of energy.

Broad Strategies

The recommendations discussed in the following pages begin with the premise that any policy actions must be based upon broad public awareness of land ownership issues and must include broad citizen participation in making of decisions about land use. Given this basic premise, the recommendations reflect a threefold strategy towards dealing with land ownership patterns and their impacts.

Strategy 1: Land Reform. The concentration of land and mineral ownership in much of Appalachia,combined with the lack of land use regulations has led to the effective control of land ownership and use options by a relatively few owners. This control provides these owners with the opportunity to benefit greatly from their ownership, while some segments of the community or indeed the community as a whole may benefit little, if at all. Consequently, actions must be taken which deal with the underlying problems of concentrated and absentee ownership of land and mineral resources. Mechanisms should be found by which people of the region can gain more access to, control over, and benefit from the land and its resources. Options for land reform which protect and benefit all communities and their inhabitants should be developed and implemented. Possible options range from the use of eminent domain for meeting community needs to programs for limiting excessive corporate ownership of land not being used(such as the case with agricultural lands in South Dakota): from developing broad, new programs for land redistribution to broader public ownership and control of the land and resources (e.g. through community land trusts). For too long the U. S. government has been an advocate of land reform in Third World countries, while ignoring the urgent need for land reform in the rural areas of this country. It is past time for public discussion of land reform options in Appalachia.

Strategy 2: Impact Mitigation. In today's political and economic climate, it is unlikely that any fundamental reform of land ownership and land use policies will occur easily or quickly. In light of this reality, further actions must be taken which mitigate the adverse impacts of ownership patterns, even though they do not directly address the underlying structure of land ownership. Until such time as more fundamental reforms are achieved, policies must be implemented to insure patterns of land use beneficial to the community; provide adequate tax revenue for the provision of services; promote diverse economic development; provide housing adequate to meet present and potential community needs; and to insure energy development that is non-destructive of local communities. Such actions can help to alleviate the negative impacts that concentrated and absentee ownership have had and continue to have on localities throughout the region.

Strategy 3: Land Retention. Land ownership in Appalachia is not a static entity: major land transactions and numerous smaller transactions continue to occur which can lead to the domination of an area by a particular type of owner. In many areas of the region such a transformation of ownership patterns is taking place, the result of which is the loss of ownership and control of land by local residents and communities to absentee corporate and/or government interests. Strategies should be developed to prevent this loss of local land for local use. *Land retention policies must be developed to insure that land is retained for local economic and housing development, as well as for agricultural use.* Comprehensive land use planning, with broad public participation, is needed to actively monitor any land ownership changes and evaluate their impacts on the locality.

The ideas presented here are not inclusive, nor do they always represent a consistent package. Rather, they pose a range of policy alternatives for dealing with land ownership patterns and their associated impacts. The recommendations are usually couched in general terms, recognizing that much public debate is needed before the implementation of specific policies.

Issue 1: Reporting of Land Ownership

It is impossible to develop policy options for dealing with land ownership issues in the absence of accurate and complete data on ownership that is readily accessible to planner and public alike. The availability of such data is necessary whether the policies to be developed are those of land reform, impact mitigation, land retention or their combination. While this study was able to obtain land ownership information in 80 counties, there were continual problems with the accuracy, completeness and availability of data in all the states in which the counties were surveyed. This problem has at least two interrelated facets: the manner in which land ownership, taxation and use information is recorded and the type of reporting that is required. Traditionally, collection of ownership taxation data has been left to local counties and states, but the Task Force urges a system of land ownership inventories at all levels: federal, state and local.

--The Land Ownership Task Force strongly supports moves toward further study of land ownership by the federal government, as are currently being discussed in some quarters. Currently, land ownership data is collected by a number of federal, state and local agencies, often in overlapping or even contradictory ways. Thus, the Task Force calls for the establishment of a land ownership census system or an inventory that would document land ownership nationwide (such as those proposed in recent papers at the 60th Anniversary Conference of the American Institute of Planners.)[1] Such a system would serve the functions of affirming land ownership and use as national issues as well as standardizing land ownership information.

--To deal with the often unclear and/or partial records of ownership at the local level, the Task Force recommends that the recording of land ownership and taxation information be standardized, at least within states. Such action would help to prevent the concealment of property ownership and taxation that maintains current inequities. Once such standardization is mandated, suitable monitoring by the responsible local officials would have to occur to insure compliance.

--Recognizing that counties often do not have either the resources or personnel to develop comprehensive land inventories, the Task Force calls upon regional agencies to assist communities in doing local land ownership inventories. Such agencies might include the Appalachian Regional Commission, local development districts (LDD's), TVA with its extensive resource mapping capacities, and Farmer's Home Administration or the Agricultural Extension Service through the local agents.

--Land ownership and taxation records are often not readily accessible to the public. Many states, including Tennessee and Kentucky, now have land ownership and tax information compiled, in their capacity of providing technical assistance to county officials. This information, however, has not been considered public information at the state level, forcing studies to occur at the county level. The Task Force urges that mechanisms be established for provision of the information at state levels. At the local level ownership information should be presented in some standard, readily available format.

--In many cases there is considerable under-reporting of mineral properties as well as of land holdings. In Kentucky, for instance, there is very inadequate knowledge about who owns the mineral wealth of the state. Recent efforts to document such ownership indicated that companies often under-report their ownership. Where reporting does occur, it is unclear where the rights are located making it difficult and expensive for the surface owner to discover who owns the minerals under the land, such as has been the case in Tennessee coal counties. The Task Force strongly recommends the establishment of a program requiring detailed reporting/recording of all mineral properties and mapping of the location of those properties. Suitable penalties should be devised for failure to comply (e.g. reversion of mineral rights to the surface owner or forfeiture of such properties to the state for future dispersal).

Issue 2: Taxation of Land and Minerals

One of the major areas related to the ownership and use of land is its taxation. This study found patterns of consistent underassessment of property, especially minerals; inequitable distribution of the tax burden, such that the small, local property owners pay more than the large, absentee owners, and low in-lieu of taxation payments for government properties. As a result of these patterns, county governments face a lack of revenues to provide basic services. The counties either must do without needed services or they must turn to federal and state governments for additional revenues.

--Underassessment of land and minerals is a general pattern throughout the region. While this problem is most obvious in Alabama and Kentucky, it can also be clearly seen in Virginia and Tennessee. The true and actual value of surface lands recorded in the tax books is low (even though it is supposed to be appraised at fair and actual value). Since there seems to be no standard method for determining fair and actual value, these values vary considerably and often do not reflect the actual value of the land. The underassessment of minerals is even more dramatic (as will be discussed later). The Task Force urges that a standard method for determining true and actual value be established and uniformly applied at the local level within each state.

--The net effect of the property tax laws and practices is to shift the burden on the smaller owners, likely using land for homes and businesses, while leaving the large corporate or absentee owners carrying little of the tax burden. Counties dominated by large scale corporate or absentee holdings are penalized in two ways: first, because the large land holdings are usually underassessed, and secondly, because the lands are usually held for speculative value, and are not used for developments that would contribute to the tax base. Steps should be taken to compensate local governments for this tax loss. One option would include a progressive property tax system, such that the more land an owner has, the greater the assessment rate applied to it (thus altering the regressive property tax now in effect). Another option would be to place a tax on "excess property," i.e. land above a certain acreage or land held only for speculation would be assessed at a higher rate.

Mineral Taxation

Perhaps the most dramatic failure of the property tax system in Appalachia lies in its failure to tax mineral reserves at anything approximating their real market value. In some states (e.g. Kentucky) mineral reserves practically go untaxed; in others (e.g. West Virginia) attempts are underway to develop a fair system of mineral taxation. In Alabama, mineral reserves that are part of fee simple land are not even considered as part of the fair market value of the surface land. In Tennessee, the directive of the State Board of Equalization (9 years ago) to apply a fair market value to mineral rights has not been carried out. The results of such failures are dramatic: over 75 percent of the owners of mineral rights in the survey pay under 25¢ per mineral acre in property taxes. Some 86 percent pay less than $1.00 per acre. Altogether, the 80 counties in the survey receive only $4.1 million in property taxes from their enormous mineral wealth (mostly from coal).

The reasons for this state of affairs are complex and include such factors as: inadequate knowledge about mineral ownership; inadequate knowledge about the extent of mineral reserves; difficulties in determining the fair market value of those reserves; and actions by large mineral holders to prevent fair and equitable taxation. To counter this state of affairs, the Task Force recommends the following:

--That a system be developed for determining mineral ownership within each state, backed up by sufficient penalties for concealing such ownership;

--That the mineral reserves in each state be mapped and matched with corresponding surface land to facilitate identification for purposes of taxation;

--That a system be developed whereby the value of mineral reserves owned by each owner can be determined so that such reserves can be taxed in relation to their true value. Minerals not held for exploitation might be exempted from such taxes. West Virginia is currently implementing such a system for taxing mineral reserves. While their effort has received considerable criticism, it serves as evidence that such a system is possible.

The revenue potential is dramatic: using a conservative method of calculating the value of such reserves, the study estimates that mineral taxes generated would more than quadruple for the 56 coal-producing counties in the study. New tax revenues from such property taxation of mineral properties would equal at least $16.5 million annually, or almost $300,000 per county.

--Many counties within the study area have substantial federal holdings within their boundaries. The resulting removal of land and minerals from the local tax base diminishes considerably the potential local tax revenue and places a heavy burden on other landholders in the county. In the case of state owned land there are no reimbursements for the tax loss to the locality; in the case of federal ownership (especially National Forest Service) there are in-lieu payments, which are now set at a minimum of 75¢ per acre. In many cases,however, the in-lieu payment does not adequately compensate the county for its loss of revenue. The Task Force urges that in-lieu payments for government lands be increased to a level that would approximate the lost tax revenue. For example, they might be increased to equal the average tax per acre paid by local residents. Also, further federal acquisitions should cease until adequate compensation formulas are agreed upon and fiscal impacts on the affected counties have been determined.

--New mineral leasing and exploration are now taking place in areas of Appalachia previously unaffected by coal mining or other mineral extraction. Such counties are ill-equipped to make the determinations necessary for taxing these new minerals. Thus, many of these mineral resources are now not being adequately taxed, if taxed at all. The Task Force recommends that appropriate programs be developed for the identification of new mineral reserves, ownership of those reserves, lessees of such reserves, their value, and means for taxation.

--County assessors will lack the resources and personnel for implementing some of the above complex programs (e.g. mineral taxation). Therefore, the Task Force urges that regional agencies such as ARC and TVA provide the necessary technical assistance to local officials in their efforts to map and assess mineral reserves. Such actions would represent a prudent investment, at a time of federal budget cut-backs: federal assistance could help local government to generate local tax dollars for badly needed local services (especially in mineral-rich areas), rather than continuing dependence on federal funds for these services.

Issue 3: Economic Development

Economic underdevelopment is a long-recognized problem in many sections of Appalachia. While it traditionally has been explained in terms of such factors as isolation and the qualities of the indigenous labor force, this study has found evidence which suggests that patterns of land ownership may be an important element in maintaining economic under-development as well. The major impacts of land ownership patterns on economic development are lack of available land for industrial siting, lack of adequate infrastructure for such development (due to land-related factors), and the lack of local capital necessary to fund such development (due to loss of capital to absentee owners and undertaxation). These impacts limit the possibilities of industrial diversification and/or promote the development of employment opportunities that are overly dependent on dominant land ownership and use patterns.

--In areas where there is concentrated absentee ownership (corporate or public), obtaining land for industrial development at a reasonable price may be practically impossible. To insure that needed land will be made available for such development in these areas, the following strategies are suggested:

--In areas where absentee corporate ownership limits the availability of land, appropriate tax incentives be employed to encourage such owners to make land available for industrial development. If such procedures are not successful, state and/or localities should be empowered with the right to condemn the needed land in the name of the public interest.

--In areas where federal ownership is dominant, agreements should be worked out between the federal agencies and communities to make needed land available. Land trades could be used to facilitate this process (by which the federal agencies exchanged land suitable for development for other land in the community).

--Absentee corporate ownership contributes to an outflow of capital in the areas in which it is dominant. The Task Force recommends that taxation of absentee corporate land be sufficient to provide the local capital necessary for economic development. Programs should also be developed to induce such owners to recycle or reinvest some of their wealth in the communities from which that wealth is gained.

--The lack of an adequate local infrastructure results from several sources: unavailability of land, lack of adequate tax revenue due to underassessments; and lack of local capital due to the outflow of wealth. The Task Force urges that a more equitable and greater revenue-producing taxation system be developed to provide money for infrastructure development. The right of eminent domain should be used whenever necessary to make land available for infrastructure development.

Issue 4: Loss of Agricultural Land

Utilizing agricultural census data, this study has documented a dramatic loss of farmland in Appalachia. Present ownership trends indicate that agricultural lands will experience increasing pressures from a number of sources: expanded energy development, damage from strip-mining, inflated prices, increasing property taxes, and the conversion of agricultural land to other uses. The decline in the regional agricultural economy is evident in the loss of acreage and farms, the low percentage of land devoted to agriculture, the percent of farmers engaged in non-farm occupations, and the increasing age of farmers. The influence of ownership patterns here can be illustrated in several relationships. In the survey counties, the greater the corporate control of land, the lower the percentage of land devoted to agriculture. Absentee ownership and the concentration of ownership are also associated with low use of land for farming. The trends that are associated with these ownership patterns point to a demise of agriculture as part of the regional economy unless dramatic action is taken. To help counter these trends, the Task Force recommends:

--The application of present use or agricultural assessments in all counties with agricultural land. This should be accompanied by an educational program to insure that all eligible owners are informed about such assessments and how to use them, as well as adequate supervision to protect against the mis-use of such assessment for the benefit of non-agricultural owners. For instance, in Kentucky and Alabama large properties held for mining, not for agriculture, have taken tax advantage of agricultural assessment rates.

--Careful monitoring and regulation of energy development in agricultural areas. Any energy development in agricultural areas should be undertaken only after extensive review of its impacts on agriculture, a review that includes maximum citizen input. Educational programs are necessary to inform farmers of the possible impacts of energy development. Some areas may need to be declared unsuitable for energy development (e.g., the possibility of prohibiting strip-mining in prime agricultural areas).

--Restrictions on recreational/tourist development in agricultural areas. This could take the form of restrictive zoning that would protect farmland from the encroachment of resorts and second-home development.

--Restrictions should be considered on the amount of farmland which can be held for non-farm uses (e.g. as in South Dakota). This would limit the amount of farmland that could be bought by large corporations or individuals to be held for speculative purposes.

--A greater commitment by government at all levels to the preservation of agriculture in the region. Federal agencies such as USDA and regional agencies such as ARC should develop agricultural support programs aimed at the protection and development of agriculture as a component of local economies.

Issue 5: Housing

Problems with both the quantity and quality of housing have been chronic in the central Appalachian coal counties, but also severe in other areas of Appalachia. This study finds that a major influence on housing in the region has been the direct and indirect effects of absentee corporate and government ownership, the first being predominant in the coal counties while the latter is predominant in recreational counties. The direct impacts of such ownership patterns are: restrictions on the availability of land; barriers on financing where mineral rights are severed from surface ownership; and inflation of prices of land on the local housing market. Indirect impacts include: lack of financing, provision of services (e.g. water and sewage), and competing land use patterns such as strip-mining. In light of these findings, the Task Force recommends:

--That housing agencies develop strategies of making land available where housing is needed, rather than of providing housing only where land is for sale. As part of this strategy, state and local entities should be empowered to condemn land for use in meeting local housing needs in cases where absentee corporate owners do not willingly make such land available (as occurred in the condemnation of corporately held land in Mingo County for local housing).

--Since severed mineral rights often pose a barrier to financing, that all public financing and housing agencies (e.g. Farmer's Home Administration) consider the mineral rights problem in making decisions about loans, housing programs, etc.

--That local and regional capital resources be developed to assist area residents in the purchase of housing. The development of local or regional land banks would be one option here. The urban-oriented, unrealistic restrictions on housing that are part of many federal assistance programs should be re-evaluated to take into account the realities of rural Appalachia.

--That state and local entities be empowered to condemn land if necessary for the development of services such as water and sewage. State and local financial reserves for such development should be established through a strong system of property taxation.

--In areas of present or potential residential development, that there should be restrictions on land-use patterns (e.g. strip-mining) detrimental to residental development.

Issue 6: Energy Development and the Environment

Given the national energy crisis and the promotions of regional officials and energy interests, Appalachia is likely to experience dramatic growth of energy development. Recent ownership and leasing trends indicate that large, absentee corporate interests are preparing themselves for this boom period. Beginning in the 1960's large energy conglomerates (especially oil companies) have gained control of much of the coal reserves in Appalachia. This control is much more far-reaching than the ownership data itself would indicate, since the leasing of minerals is extensive and accounts for additional thousands of acres under control of energy conglomerates. The capital and technical resources of these corporations provide for the application of ever-larger scale technologies to the extraction of coal in the region. The patterns of absentee ownership and control which are historically characteristic of central Appalachia have now extended outward to other countries. In the Eastern Overthrust Belt, there has been extensive speculation by the oil giants in oil and gas leasing. This continues at a rapid pace. Speculation in and plans for the development of new minerals such as uranium and bauxite are now evident in some areas of Appalachia. These ownership trends and their associated energy development are proceeding with little comprehensive planning and practically no opportunity for citizen input. Yet the impacts on particular communities may be massive.

--The expansion of absentee corporate ownership for energy development threatens to consume vast amounts of the region's land. To combat this, a land retention program should be developed to insure that forms of absentee corporate ownership do not expand without clear decision-making which includes participation by local officials and an informed citizenry. This program should include several components:

a) limits on the amount and type of land that could be held by a given owner for purposes of energy speculation, modeled after other states which have limited the amount of farmland which corporations can own.

b) that programs be developed whereby leasing activities become public information through required reporting and recording. Leasing is a form of de facto ownership and indications are that leasing is becoming an important strategy for the accumulation of the region's resources by energy conglomerates. However, residents in many affected areas are unfamiliar with mineral leasing arrangements and as a result are often at a disadvantage. Fraudulent leasing practices are not an uncommon occurence, as recently illustrated in the leasing of oil shale in central Kentucky, where leasing provisions were overturned by the State Consumer Protection Agency. Thus, leasing activities in the region should be strictly monitored. Educational programs must be developed to inform landowners on leasing rights, and the impacts of energy development on their land and communities. The ARC and other agencies could play an important role in this area.

--Programs must be developed to insure that local communities have the necessary information to make crucial decisions relative to impending energy developments in their areas. Previously, corporations have kept such plans and activities secret until it is too late for community residents to affect their decisions.

--Recent trends in ownership (i.e., the aggregation of vast amounts of land) and the accompanying scales of technology and capital have produced a scale of strip-mining previously unknown in the mountains. Strip-mine operations of several thousand acres are in the works. Given the well-known negative effects of strip-mining and the limited economic benefits it brings to the localities involved, the Task Force recommends:

a) rejection of the broad-form deed where it is still applicable. The Tennessee Supreme Court, for instance, has recently upheld a newly passed Surface Rights Act, which protects the rights of surface owners where the mineral rights have been severed.

b) closer regulation and rigorous enforcement of state and federal regulations which protect the land. The Office of Surface Mining, for instance, should remain strong and is necessary to insure diligent state enforcement.

c) increased use of the "unsuitable for strip-mining" section of the federal legislation, to protect land needed for other land uses.

Issue 7: Land Use

The preceding questions of the use of land for housing, agriculture, economic development or energy development are essentially questions involving competition among various land uses. Yet systematic land use planning and regulation is virtually non-existent in most rural counties of Appalachia. In this environment of little or no regulation, the decisions about uses of the land are made by the larger or more powerful owners, as might be expected. Such decisions are usually made in terms of their own interests and not of the needs of the majority of people in the community. In the case of large landholders (private or government), single decisions can affect entire areas, even though the affected public has had little or no say in the decision, and in many cases, may even be unaware that a decision is impending until it is well on the way to implementation.

--To alleviate this situation, land use mechanisms must be developed which insure broad-based citizen participation and which have the power to regulate land use in the interest of the larger community. Traditional zoning boards have fallen short here because of their usual domination by special interest groups (e.g. developers, realtors). So, land use boards should be developed which insure (perhaps mandate) the participation of a cross-section of the community's population. One model for such a board is that of the local public utility, a model that would assure local public control of land resources. Such a board would be empowered to purchase land and preserve it in the public interest. While still allowing for private property and traditional land use control, this model also provides for local public ownership that could relieve patterns of absenteeism and concentrated ownership.[2]

Issue 8: Further Study

The systematic study of land ownership and its impacts is a relatively new field. This present study represents only a first step in the much needed analysis of land ownership in Appalachia and elsewhere in the nation. Obviously much further work needs to be done on both ownership patterns and the analysis of their impacts. With that in mind the Task Force recommends:

--*That ARC or other appropriate governmental agencies devise a method for developing and updating the data of this study,* so that changes in ownership can be analyzed over time. The data gathered for this study provides an excellent baseline for such longitudinal investigations.

--*The study of ownership should be extended to other areas of the region,* especially to northern Appalachia, which was under-represented in this study.

--*That future land ownership studies extend to more systematic study of leasing patterns,* which are an important element of land control.

--The study has suggested that land ownership is one important contributing factor in a number of problems in the area (e.g. housing, lack of economic development, loss of agricultural lands, etc.). *Further study must be done to determine how land ownership interacts with other factors thought to influence these problem areas.*

Footnotes for Recommendation Chapter

1. See, for instance, Bernard J. Nieman, ed., *Land Record Systems Can and Should be Modernized, Selected Papers from American Institute of Planners 60th Anniversary Conference* (Madison, Wisconsin: Institute for Environmental Studies, March 1980).

2. See, for instance, discussion of this concept in Charles C. Geisler, "Toward Reform in Land Reform: Coupling Local Control and Social Control," presented at American Sociological Association, Boston, 1979.

APPENDIX I

METHODOLOGY OF THE LAND STUDY

The study of land ownership anywhere in the United States is a difficult undertaking from a methodological point of view. The quality of the data that one must deal with, especially in a multi-state study, leaves much to be desired. Generally speaking, there are no central repositories of such information other than at the local (county) level. Even at that level there is little standardization across counties within the same state, much less across state lines. Within the broad framework of often vague and confusing state property and taxation laws, county officials have considerable leeway in both implementation and record-keeping. The result is often chaotic.

Some types of ownership often are not even recorded at the county level. For instance, public ownership figures are many times available only from those federal or state agencies owning the land. Non-profit private ownership is likewise not usually recorded, although some states are beginning to require this. When one adds to this the various legal and quasi-legal ways in which true property ownership can be concealed, the difficulties of obtaining a comprehensive picture of ownership are even more evident. Many of these problems are compounded in the Appalachian region by such things as the separation of mineral and surface ownership and the complex interlocks between corporations owning and mining mineral land in the region.

Thus, the methodology, which appropriately derives from the conceptualization of the purposes of such a study, is tempered somewhat by the character of the information from which the study's conclusions must be drawn. The purposes of the study, as articulated in the initial proposal to the ARC Research Committee and later reiterated in both the Phase I Report and the Revised Impact Methodology are:

1. To document ownership patterns of land in rural Appalachia, looking at such factors as extent of corporate ownership, extent of absentee ownership extent of individual or family ownership, extent of local ownership, descriptions of principal owners, rate of change in ownership patterns, relationships between ownership and land use.

2. To investigate the impacts of these land ownership patterns upon economic and social development in rural Appalachia, exploring the relationship of land ownership patterns to

land use, taxation structures, land availability for housing and industry, coal productivity, agricultural productivity, economic growth and stability, social development and stability.

3. To develop action-oriented policy recommendations for ARC, state, federal and local officials, government agencies and the public to assist them in dealing with problems relating to ownership patterns.

The resulting methodology was designed to expose both the facts of land ownership and its impacts on local communities.

Another consideration was integrated into the total research process, having to do both with the utilization of researchers and the varied purposes of the research process itself. The land ownership study was somewhat unique in that it arose out of the need of citizens and community action groups in the region for information on something they felt to be an important factor in the creation of local and regional problems. In the past, it has often been assumed that research could only be accomplished by the trained expert: the result was that knowledge produced often also remained the province of that expert. From its inception, this project was conceived of as the appropriate province of a concerned citizenry.

Thus, from the beginning, the land ownership study was viewed as a decentralized, cooperative research process that would involve residents of the study counties whenever possible. State task forces of citizens were to determine the counties in their respective states to be included in the study as well as be involved in the selection of research approaches and issues to be investigated. In addition to the provision of comprehensive information on land ownership, the research process was intended to provide a model for the involvement of local residents and citizens groups' in research about issues of concern to them. The manner in which these aims were incorporated into the research process will become apparent in the discussion of the various phases of the study.

Preparation for and the implementation of the land ownership study proceeded through several identifiable phases. Briefly stated, the phases were as follows:

a) Planning Phase - review of previous land ownership studies and determination of the general directions and structure for undertaking the study.

b) Recruitment and Training - recruitment of field researchers, state coordinators and other staff and training in the research procedures to be employed in the study.

c) Research Phase - selection of sample counties for the survey and case study portions of the research; implementation of research procedures in the survey and case study counties; accumulation of pertinent aggregate data for the sample counties.

d) Verifying, Processing and Analyzing Data - verification of survey, case study and aggregate data; preparation of survey and aggregate data for computer analysis; development and implementation of programs for computer analysis; retrieval of case study data for use in regional report.

e) Writing and Production of the Report - development of a structure for the final report; allocation of responsibilities for various sections of the report. Writing, editing and typing.

The succeeding pages will further elaborate on the details of each of these phases.

Planning Phase

The planning phase of the land ownership study took place over several months in the fall of 1978 and the winter and spring of 1979. The proposal to undertake the study arose out of the Appalachian Land Ownership Task Force, a group made up of scholar and citizen representatives from eight Appalachian states, who were concerned about the general lack of information on ownership and its impacts in the region. Several of the academic members belonged to the Appalachian Studies Conference, an organization of scholars formed in 1978 to further research and understanding of the region. A number of the citizen representatives were from the Appalachian Alliance, an association of civic organizations formed in 1977 to provide a more unified voice on issues of common concern in the region.

Over these months members of the Task Force met to formulate the goals, methodology and structure of the proposed study. In the process they reviewed the methods and costs of previous land ownership studies, assessed the potential implications of such a comprehensive study for public policy, and began to develop a structure suitable both to the gathering of accurate information and involvement of local citizens in the research process. Consultants familiar with land ownership issues were also utilized when appropriate to evaluate the research plans. A Phase I Report was prepared in the early spring of 1979 which detailed the plans of the study, including a review of previous studies, the identification of major impact areas, data gathering methods and the structure of the study.

The Methodology of Past Land Ownership Studies

A review of previous land ownership studies provides several clues as to the development of the methodology of this study. However, their guidance is limited by several factors: a) most were conducted within one state or a limited section of a state rather than in a multi-state region; b) most of the studies dealt only with a survey of land ownership and did not include substantive case studies or a comprehensive study of impacts. All, however, share one thing in common: the necessity of going to county records to elicit the information. Thus, a brief review of their methodologies is apprpriate.

Southern Illinois

One of the more recent studies was undertaken in the coalfields of southern Illinois. Entitled Who's Mining the Farm? and conducted by the Illinois South Project, the report was "gathered through tedious and time consuming research at county courthouses around the state."[1] Land ownership was defined by the individual or company paying the tax bill on a particular land parcel. For their basic research, they used the Supervisor of Assessment Office Books found in the county courthouse. Other county resources, such as the Tax Collectors Books and the Grantor and Grantee Books in the Recorder of Deeds Office, were consulted when necessary.[2] Courthouse personnel were usually friendly and helpful. In fact, they suggest using the knowledge of such personnel, since "county records are not set up for easy and efficient land ownership research by citizens."[3] Problems encountered dealt more with the quality of the data and the rapid turnover of minerals in some counties.

Southern Ohio

Another recent study and one whose methodology influenced our own was conducted in a five county area of southeastern Ohio.[4] Data for the study was collected from county tax records made available through the offices of the treasurer and auditor. The data collected included name and address of owner, location of the property, acreage (total and type), type of ownership, assessments, etc., for every piece of property in the county, a collection task that required immense amounts of time.[5] Owners were classified as non-resident, corporate or public according to the title ownership listed in the county tax books. A second part of the study including the mailing of questionnaires to a sample population of non-resident owners to determine more specific information on those owners and their property. Additional time was spent mapping absentee-owned property in each county.

Upper Peninsula of Michigan

In their survey of land ownership in fifteen counties in the Upper Peninsula of Michigan, Gilbert and Harris used a slightly different approach--"using county plat books, which show all land parcels outside of concentrated settlements, they numbered every section (640 acres) in each township and drew a 25% random sample.[6]

Then they tabulated the acreage and type of owner for the owner of every parcel in each section sampled. They utilized five ownership categories: federal, state, other public, individual and corporate. Using the percentage of total acreage held in each township by each category of owner as independent variables, the researchers attempted to determine the effects of ownership on per capita income and percentage of families below the poverty line. They also controlled for certain intervening variables often associated with rural poverty.[7]

Eastern Kentucky

In 1977, the University of Kentucky investigated ownership in two eastern Kentucky coal counties, Harlan and Perry. In each county, owners of over 100 acres were obtained from the County Tax Assessor's books, as well as property assessments. Owners were divided according to type (corporate or individual) and residence (absentee or local).[8]

Western North Carolina

In the summer of 1974, the Mountain Land Use Project of the North Carolina PIRG spent four months collecting land ownership data and conducting interviews with officials and land owners in the western part of the state. In preparation for selection of counties to be studied, they first profiled all twenty-four mountain counties on the basis of certain general characteristics of population, geography and apparent development. Characteristics included were "total area, extent of federal holdings, per capita income, industrial investment, extent of urbanization, tourist expenditures, population and population growth trends, and the estimated extent of resort development. The resulting choice of counties was deemed to be broadly representative of the total western Carolina area.[9]

In carrying out the study, county tax records were examined, listing the parcel, its acreage, and the address of the owner. In each county the information was analyzed for 1968 and 1973, in order to assess changes over the five year period. Data was then divided by local and non-local holdings, and by size of tracts (small, medium and large). Only limited efforts were made to trace parent holdings for corporations.

Generally speaking, the researchers found the needed information was readily available, except in one county where they were treated with open hostility. In Madison County, "county officials seized our notes and refused to allow us to take notes on what is public information." Other problems were more directly related to the nature of the data and methods of record-keeping. In many instances owners of second-homes or vacation homes were recorded as local owners when their principal residence was actually in another area or state. In other cases owners of lots in a resort development were not listed on the tax books, since their lots often remain in the name of the developer until they are fully paid for. Also, corporate owners were often listed with local addresses, even though their headquarters were elsewhere. Lastly, the fact that property tax information was usually organized according to township in the county made it difficult to obtain an accurate count of owners.

Eastern Tennessee

In 1971, three Vanderbilt students investigated land ownership and taxation patterns in five major eastern Tennessee coal producing counties. To obtain the necessary data, tax rolls in each county were used. Further data on rates of coal production were obtained from the Bureau of Mines, Tennessee Department of Geology, Tennessee Department of Labor, and the Tennessee Department of Conservation. Rates of coal leasing were found in County Deeds and Records Offices. Corporate profiles were developed from standard financial sources and from interviews with corporate officials.[11]

Southwestern Virginia

One of the more recent studies on ownership and taxation in the coalfields has been conducted by Dr. Carol Schommer, for the Virginia Citizens for Better Reclamation, Inc.[12] She obtained her data from local tax records. Additional data on coal production and reserves were obtained from the Bureau of Mines, National Coal Association and company reports.

West Virginia

In 1971, a major study of land ownership and taxation patterns was conducted in fourteen West Virginia coal producing counties.[13] This study provided background for a later journalistic survey of West Virginia ownership, Who Owns West Virginia? by Tom Miller of the Huntington Herald Advertiser.[14] Data was collected from copies of county land books which, in West Virginia, are centrally filed in the state land office. From the county-by-county ownership data, listings of large land owners were then developed.

The above studies provide many of the essentials for doing ownership research at the local level as well as point to the difficulties involved. Their insights into such tasks as the designation of ownership categories, use of county tax records, the need to use supplementary sources for determining true ownership, and the identification of the residence of owners have been incorporated into the methodology of this study. Other aspects of the methodology described later arise from the special circumstances associated with the purposes of the study and the nature of land ownership in the area.

In order to understand the methodologies employed in the Appalachian Land Ownership Study, one must look at three further factors that have influenced their development: a) the purposes of the research itself (i.e., the data to be collected); b) the expectation that local citizen interest and participation would play a significant role in defining state and local research interests; and c) variations in data and land ownership patterns found across the region. All of these factors weighed significantly in the determination of the methodologies finally incorporated into the study as well as in the formulation of the structure of the study.

Organization, Recruitment and Training of the Research Team

The Appalahcian Land Ownership Task Force assumed responsibility for the overall coordination of the research project. In addition to the initial formulation of the research proposal that defined the purposes, scope and preliminary methodology of the study, the Task Force was responsible for the recruitment of regional and state staff who would in turn assume responsibility for the day-to-day coordination of the research. State task forces were also formed, made up of citizen representatives from each of the states in the study area. These groups of citizens were instrumental in the selection of state coordinators and other aspects of the study such as the selection of sample counties and identification of critical impact areas The creation and maintenance of the state task forces insured continued citizen involvement in the research process.

The research team itself was organized in accordance with the basic tasks necessary for the implementation of a study that was regional, state and local in scope. Accordingly, members of the team were recruited at those three levels.

> Regional Level - a small staff was recruited to coordinate the state studies, handle fiscal and administrative matters, and develop a regional report. A researcher/writer was secured to help oversee research throughout the study area. Among the specific tasks at the regional level were recruitment and training of state people,

a survey of available literature, compilation of aggregate regional data, and the ongoing supervision and training of state teams. The latter necessitated continual consultation and several state level work sessions.

State Level - state coordinators were chosen upon the recommendations of representatives from each state. Their responsibilities included: oversight of field investigators in the various counties, collection of necessary supplemental state data, assistance in the compilation and analysis of data, and the production of appropriate state reports. In cooperation with the state task forces, they also helped determine counties to be studied and specific impact areas pertinent to the state. They additionally worked in cooperation with regional staff and other state coordinators to insure regional coordination of the state research.

County Level - field investigators were recruited by the various task forces and state coordinators to do the basic courthouse research that forms the basis of the study. These investigators were usually either local people or area college students.

Organization of the research tasks at these levels insured the accurate collection of data, coordination at the regional and state levels, and citizen participation in the research process.

In sum, two of the preliminary tasks for the implementation of this phase were: a) the recruitment and training of field researchers; and b) the development of research instruments that would take into account both the variations of courthouse data and the interests of local and state citizens groups. The first of these tasks was not difficult, since several potential researchers had already been involved either in the regional task force or in local groups interested in the land issue. In some instances, however, it was necessary to recruit college students, most of whom had local roots in the area.

The tasks of training field researchers and the development of a suitable research instrument were really part of the same task, since the participation of citizens was deemed essential at every phase of the research process. Thus, citizen researchers were involved in the development of the various research techniques used in the course of the study. Their insights, along with those of resource people with experience in land ownership research, went into the planning for the first and subsequent training sessions. The first workshop in May 1979, brought together approximately 50 people to prepare for the land ownership research. Later training sessions were held at the state level during the summer, to deal with research problems that were state specific.

The first workshop had to deal with several challenges. Among the first of these was the preparation of a coding sheet upon which the field researchers could record the ownership information found in the county courthouses. Training was also necessary in the types of resources available in the courthouse, the development of rapport with office personnel, how to trace down the real owners, problems that were likely to be encountered, etc. Workshop participants also became familiar with other resources that would help them to identify connections between corporate owners. Training was also provided in the case study methodology as applied to counties.

The Research Phase

The research process itself went through the following four steps:

> Selection of Sample Counties - a sample of 80 counties was drawn from the Appalachian counties in the six state study area.
>
> Survey of Land Ownership Patterns - collection of the basic ownership and taxation data from the county land books in the 80 counties. Utilizing a coding sheet, local researchers documented: type of ownership, residence of owner, land use, mineral and surface acres, mineral type, land, building and mineral values, tax paid, and the name and address of the owner of all parcels in rural areas of the county falling within a pre-selected acreage cut-off.
>
> Case Studies - documentation of land ownership and use trends and their impacts in 19 selected counties through in-depth interviews with county residents and the use of available documents.
>
> Collection of Aggregate Data - compilation of regional, state and local data from available sources suitable for documentation and analysis of the impacts of ownership on economic and community development.

While these steps will be discussed separately, it is crucial to remember that they constitute an integrated research methodology. These steps in combination were designed to provide both a comprehensive and specific understanding of land ownership patterns and their impacts in the region.

Selection of Sample Counties

Rather than develop a few narrow hypotheses about land ownership and test them with the usual objective means in a limited number of counties, it was decided to focus on as broad a selection of counties as possible in the survey phase of the study. While this limits the depth of study in any given county, it does provide a good sampling of the counties in the region. The selection of one-fourth of these survey counties for in-depth case studies offsets this limitation. That specific hypotheses were not developed also does not mean that no general expectations directed the study. Previous studies, literature about Appalachia and the experiences of local citizens all influenced the selection of survey counties, case study counties and the socio-economic characteristics to be correlated with the land ownership data.

Selection of counties for the survey phase of the land ownership study was based on two criteria: a) representativeness of the various types of land ownership and use patterns in the region; b) the existence of local citizen initiative and interest in developing, completing and using the study. On the one hand we wanted a selection of counties that represented coal, agricultural and recreational areas of the region. Previous studies, scholarly and literary work about the region, and the divergent historical development of these areas lead us to expect different ownership patterns. On the other hand, our concern was to facilitate a basic premise of the study: that there be input by local citizens in all phases of the research process. Given these two basic considerations, final selection of sample counties was made by the state task forces in cooperation with the state coordinator. The representativeness of the counties selected should be considered in the context of the six state area rather than within each state. The fact that some states do not have all three types of areas and citizen-focus on a particular types of counties may lead to over-representation within a particular state.

Using the aforementioned regional criteria for county selection, eighty (80) counties were chosen for the survey phase of the ownership study. The state-by-state breakdown reveals the following: Alabama (15); Kentucky (12); North Carolina (12); Tennessee (14); Virginia (12); and West Virginia (15). The original intention was to survey 72 counties, but citizen interest led us to include 8 additional counties. The percentage of Appalachian counties in each state included in the survey ranged from 25% (Kentucky) to 57% (Virginia). The eighty counties represent 34% of all the Appalachian counties within the six state area.

Generally speaking, case study counties were chosen for the same reasons as the survey counties: that they represent various land ownership patterns and related issues and that there was citizen interest in carrying out the studies and involving themselves in follow-up action.[16] Also, as with the survey counties, the state task forces chose the case study counties from the survey counties in their respective states. The predominant factor influencing the choice of counties in most instances was the existence of land ownership issues of interest to local and/or state citizens' groups. The counties chosen are, however, representative of the different types of counties (coal, agricultural, recreational) when all 19 case studies are considered.

This representativeness is obvious in the case study counties chosen by several of our state task forces. For instance, in North Carolina, the case study counties were chosen to represent three particular land ownership situations: federal ownership, recreational development, and a combination of patterns and influenced. In Virginia, counties were chosen to represent the major issues related to land ownership and use in southwestern Virginia. The four counties chosen represented the following patterns: a traditional coal county; a traditional agricultural county with urban and national forest pressures; a traditional agricultural county with urban and energy development; and a traditional agricultural county with recreational and electric power development. In Kentucky, all three of the case study counties are coal counties, although one has only recently become so. The West Virginia task force chose two traditional coal counties, one with mixed mineral, agricultural and recreational influences, and another where mineral development is on the horizon.

Survey Phase: Developing a Coding Instument

In developing a coding instrument that would meet the needs of the study and allow for computer analysis of the ownership data collected, we turned to other land ownership studies for guidance. One in particular seemed to approximate what we were about to undertake: the southeastern Ohio Study conducted by Dr. Nancy Bain and her associates. She very graciously provided us with a copy of the coding sheet used and served as a consultant in the planning of the study, including attendance at the spring workshop. The workshop participants in May 1979 began with a revised draft of that coding sheet and, taking into consideration the various recording systems in the six states and the information needed, devised an instrument appropriate to the study. The resulting coding sheet and instructions may be found in Attachments B & C.

A primary concern was to decide what property was to be coded. The decision was to record all owners of property in excess of 250 acres and all corporate or absentee owners holding 20 or more acres. The rationale for this breakdown was both practical and theoretical. On a practical level a decision had to be made on the regional scope of the study. If we were to look at every parcel of land in the counties, it would severely limit the number of counties that could be surveyed. Dr. Bain had found that recording every parcel of property required immense amounts of time and suggested that information need not be recorded in such detail. Given our restraints of time and resources as well as the desire to make the study a regional study, we decided to devise acreage cut-offs that made sense in light of what was already known about land ownership in Appalachia.

Practically all of the previous studies of land ownership in Appalachia have identified absentee and/or corporate ownership as major problems of the region. In the coal counties, this is usually corporate ownership, whereas in the recreational counties it is a combination of corporate, federal(public) and individual ownership. It was thus deemed important to identify as much of the absentee ownership as possible. By recording all such parcels twenty acres or larger, most absentee ownership would be accounted for, even that in relatively small parcels. The total of such parcels often amounts to significant ownership by absentee and/or corporate owners. When an absentee or corporate owner held numerous parcels smaller than 20 acres, but which would together total 20 acres, an attempt was made to accumulate these. The twenty-acre cut-off may, however, have led to some undersampling of absentee individual ownership, some of which may be in smaller parcels.

Studies have generally not identified small individual holdings as a major problem in Appalachia. In studies outside the region and in literature about the region, the presence of a large number of local small holders is seen as a positive factor for the local community. It seems to have been the accumulation of large mineral and/or surface holdings by local individuals or absentee owners that have posed problems for local development. The control of land implied by the concentration of large holdings, whether local or non-local, is of potential significance for several aspects of such development. Among the possible areas of impact are housing, economic development, and the services infrastructure. Thus, it seemed reasonable to focus on large holdings held by local individuals to the exclusion of smaller locally-held parcels.

Before looking specifically at the coding sheet, one further criterion for selecting the parcels to code deserves mention. Researchers were instructed to look only at property in the rural areas of the counties (i.e. all areas not incorporated). In 72 of the 80 counties over half of the population lived in rural areas, and thus were likely to experience directly the impacts of rural land patterns. In addition, our concern was with how the rural patterns affect the overall development of a county. The acreage cut-offs used probably eliminated any concern with incorporated areas anyway, but parcels within such areas were not recorded regardless of size.

Location of Parcels

Land parcels were identified for coding purposes in three ways: by state, by county, and by district within each county. Coding by state allows us to look at land ownership within the state or to compare patterns across the states. Also, since the study was being organized by state (state task forces), this allowed for immediate identification of the state in which any given parcel was located. The county identification allows for the organization and analysis of data by county, whether within a given state or across state lines. This allowed for the later grouping of counties by type. County identification also facilitates the availability of information for interested local groups. The tax district identification was designed mainly for within county analysis, realizing that various districts within a county may represent different land ownership patterns. As will be discussed later, the analysis of land ownership patterns and impacts was implemented only on the region, state and county levels, with the basic unit of analysis being the county.

Nature of Land Ownership[17]

Ownership of the land was divided into four categories: individual, corporate, public, or private non-profit. Ownership was determined by the name of the owner listed on the tax rolls or in other sources. Individual or private ownership refers to ownership by one or more persons who do not constitute a business, level of government or non-profit organization. Corporate ownership refers to ownership by one or more persons who constitute a business organization. Public ownership refers to ownership by either local, state or federal government. Private non-profit ownership refers to ownership by one or more persons who, for purposes of taxation are classified as a non-profit organization (e.g., a church or college).

These categories were selected for two reasons: inclusiveness and meaningfulness. As for the first reason, these four types of ownership are inclusive of all types of ownership found in rural Appalachia. Secondly, these categories are meaningful in terms of the expected association among land ownership, land use and impacts on local residents. A concentration of any of these types of land ownership in an area may have predictable impacts. For instance, a concentration of public ownership which is non-taxable will have a negative impact on the local tax base. Also, in as much as land ownership determines land use, the concentration of a particular type of ownership will often lead to a concentration of use with its subsequent impacts on the life of the community. The existence of divergent land ownership patterns in the same locale would be expected to create conflict over land use.

The diversity of tax record systems in the various counties and states posed some problems in determining ownership. Some ownership is simply not recorded in the tax assessor's office in most counties. For instance, public ownership is usually not available, evidently because it is not subject to assessment and taxation. This ownership is available, however, from the appropriate federal or state agencies (e.g. National Forest Service, Department of Game and Inland Fisheries).

Sometimes these can also be obtained from the local planning district, although these figures are often out-dated.

Private non-profit ownership is usually not recorded either and there are no official sources to which the researcher can go to obtain such information. Some of this may be obtained from interviews with the local tax assessor or from personal knowledge of the county, but such sources result in only partial recording of such ownership. Thus there is an under-recording of private non-profit ownership throughout the study. This was not deemed a significant problem for the study however, since the extent of non-profit private ownership in the counties studied is minimal.

Two problems were evident in the recording of corporate ownership. First, land and minerals owned by utilities (usually private corporations) are often not recorded on the county tax assessor's books. Where it is recorded, the information available is usually only partial (e.g. the name of the owner, but no acreages or taxes paid). Instead such information and the responsibility for taxation is the province of some state agency such as the Bureau of Public Works in West Virginia or the State Department of Revenue in Alabama. In some states (e.g. West Virginia) this information is considered confidential and thus not available to the researcher. In such cases or in situations where such information was incomplete, the result was an under-recording of corporate ownership.

Secondly, there is the problem of determining actual ownership. In many instances, the corporate owner listed on the tax books is really a subsidiary of some other corporate entity. Often these corporate interlocks are well-known and pose no problem since the parent corporation (the real owner) is well-known. In other cases such ownership was more difficult to trace. However, such standard published sources as Standard and Poor's, Who Owns Whom, or Moody's were used to trace these relationships so that most of these relationships were identified.

There were fewer problems with individual ownership, although the fragmented and incomplete nature of public records did pose some irritants. Often, the listing of individual names in the tax books did not include all owners. Instead the name of the owner would be followed by an et. al., indicating that there were other owners. In such cases, it was necessary to attribute ownership to the name listed, although this may have under-reported joint or family ownership. There was also a lack of uniformity in the listing of names and much misspelling. These instances could usually be clarified by cross checking addresses. When divided interests were apparent, the owner listed was treated as a partial owner and only the appropriate proportion of acreage recorded (e.g., in Virginia).

Extensive leasing in the mountains also confuses the ownership picture. Since active leases are not listed in some books as ownership and in some instances seem not to be recorded at all, it was impossible in the context of this study to gain an adequate picture of leasing. However, interviews with local tax assessors and the county case studies verify the acceleration of leasing activity in several sections of Appalachia (e.g. central West Virginia, northern Alabama, southwestern Virginia). Based on the land study data, one would expect that an adequate survey of leasing (a form of land control) would likely increase the extent of absentee corporate control of mineral resources in the region.

Residence of the Owner

The determination of residence of the owner was initially made on the basis of the address recorded in the tax books. Originally, residence of the owner was to be classified into two categories: local and non-local. Local ownership refers to an owner whose residence is in the county in which the property is located. Non-local ownership refers to an owner whose residence is outside the county in which the property is located. The latter category was further refined to take into account non-local ownership with residence within the state. The resultant three types of ownership were: in-county, out-of-county/in-state, and out-of-state.

Residence of owner is important for at least two reasons: a) residence of the owner affects the use to which land is put and thus may have very different impacts on the local community: b) literature on land issues and previous studies in Appalachia point to absentee ownership as the key problem. As for the first rationale, studies such as the southeastern Ohio investigation of ownership amply demonstrate that absentee individual owners hold land for different purposes and have different interests in the life of the community than do local owners. (Bain, Kline).[18] Goldschmidt's classic study of agricultural communities in California also demonstrated what he called the negative impacts of absentee corporate ownership on such communities.[19] Studies ownership in Appalachia have either documented or implied that absentee ownership is a key factor in determining the impact of ownership patterns.

Problems in the determination of residence result both from the residential categories used and the variations in county record-keeping systems. For instance, in states like West Virginia, the tax assessor is charged with assessing property and preparing the tax books, while the county sheriff is responsible for sending out the tax bills. As a result, owner addresses may not be available in the assessor's office, but rather in the sheriff's office. Thus, researchers in the assessors office may have difficulty in the initial identification of residence. In such cases, other sources (e.g., the sheriff's office, state computer banks, or county phone books) may be used to identify residence. In the case of corporate owners, determination of residence (i.e., corporate address) can be made from a variety of available sources.

As a consequence of the above problem, both the absolute number of parcels coded and the number of acres coded for West Virginia are smaller in relative terms than in the other states surveyed. Also, the percent of out-of-county and out-of-state holdings appear smaller than it actually is relative to other states. This is particularly true of absentee individual ownership. One of the results is that information on such trends as second home development is restricted.

A second and more general problem was much easier to deal with. The task of determining corporate residence was somewhat complicated by two factors: a) the fact that many absentee corporate owners have regional offices that are listed on the tax rolls as their address; and b) the fact that many corporate owners are really subsidiaries of larger corporate entities. In such cases, the address of the parent corporation or home office was used to determine residence. These addresses were ascertained by using standard published sources and information from appropriate state agencies.

A final problem was the result of the manner in which residence was coded. The delineation of local residence as in-county led to some dissatisfaction for a couple of reasons: a) the fact that postal routes often cross county and state lines, thus making it difficult to determine whether an address is in-county or out-of-county; and b) where counties border on other states, an out-of-state address may actually be in an adjacent county. In the latter case, the owner's significant attachments may be with the county in the adjacent state rather than with his/her own state of residence. While we would recommend a redefinition of local residence for any further study of land ownership to include contiguous counties, researchers were advised to adhere to address as the indicator or residence for purposes of this study.

Total Surface Acres

Total surface acreage refers to the actual total acres of any parcel of surface land falling within our acreage limitations. For most of the parcels such acreages were available in the 1978 Land Books. The absence of utility, public and private non-profit acreages has already been mentioned. Public acreages were readily obtainable from the appropriate federal or state agencies. Utility and private non-profit acreages were often not available from other sources. As a result such acreages are under-recorded or even not available in some counties.

A couple of other problems related to the determination of total surface acres deserve mention. In Kentucky state law does not require the PVA to list the acreage owned by each taxpayer on the tax rolls. This acreage information is included on each taxpayer's individual files, but these are not open to public inspection. Generally, PVA's do include the number of acres on the tax rolls, but in some instances only the surface owner's assessment will be recorded, but no acreage. This practice may result in a skewing of the acreage for each category of owner to the low side. Also, fewer acres may appear to be taxed than is actually the case.

In Virginia there was occasionally some problem in determining the acreage of surface land, because specific acreages were not listed in the land book. Rather such terms as lot, parcel, strip, and boundary were used with no standard definition relative to size. In many cases, however, acreage could be determined by examination of the county deed books. Where this was not fruitful, acreage figures were left blank leading to a slight under-recording of surface acreage.

Land Use

This category posed the most difficulty for researchers, primarily due to the inadequacy of information on county tax rolls. Land use was deemed an integral part of the land ownership study because of its close association with ownership. It is an indicator of the value of purposes of land ownership as well as an important determinant of the developmental possibilities of the local community. Land use categories were designed to correspond to categories thought to be recorded in tax books for purposes of determining taxes. We began with six categories of land use, but increased that to eight after discussions with the citizen researche at the spring training workshop. The expansion was thought to take in all the variations in land use designations likely to be found on the tax records of the 80 counties.

a) commercial/industrial - refers to land designated as commercial and/or industrial for taxation purposes.

b) agricultural plan - refers to land use designated for purposes of taxation as agricultural, where the land is used for pasture or other uncultivated purposes.

c) agricultural prime- refers to land use designated for purposes of taxation as agricultural, where the land is used for cultivated crops.

d) woodland/forest - refers to land use designated as woodland, timber or forests for taxation purposes.

e) residential - refers to property that is listed for tax purposes as residential (on which the owner maintains a permanent or part-time residence).

f) recreational - refers to property whose use is designated as for some recreational purposes (e.g., park, wilderness area).

g) mineral-under development - refers to land whose use is designated for purposes of taxation as mineral and whose minerals are in the process of being mined.

h) minerals not under development - refers to land whose use is designated as mineral for purposes of taxation and whose minerals are not currently in the process of being mined.

Field researchers were asked to code for primary use as well as any secondary uses so as to account for land with multiple uses (e.g. National Forest Land).

While the land use categories were developed to include most types of land use expected in rural Appalachia, they did not anticipate the inadequacy of land use information. Generally speaking, land use designations were recorded only partially, if at all. For example, land use information was not available in all counties in North Carolina, in part due to the fact that all land is taxed at the same rate. It is, therefore, not specified on some of the tax scrolls. In Tennessee land use was listed, but not specifically enough to meet the needs of the study. Taxation classes in West Virginia and Alabama were broader than the use categories on the coding sheet. There is a classification system for real property in Virginia that approximates our categories, but have not yet been widely utilized in the county land books. As a result of this variation, the adequacy of land use data varies not only from county to county within states, but also from state to state.

Some types of ownership by themselves define use (e.g. mineral ownership implies mineral use). In other cases various attempts were made to determine use. In North Carolina the number of categories was reduced and land use designations were made on the basis of ownership, whether the land had a residence on it, etc. In Grayson County, Virginia, the Commissioner of Revenue sat down with our field researcher and reviewed the approximate uses of the property she had coded. In the process he suggested the need for a new category: "held for speculation." Land use information was also gathered from various public agencies like the Agricultural Stabilization and Conservation Service, Forest Service, etc. Such information is also available from the local planning districts, but is not parcel specific. In sum, the extent of land use data on the coded parcels will vary considerably from county-to-county and state-to-state.

Total Mineral Acres

This category refers to the actual area designated as mineral regardless of type of mineral rights owned (e.g., coal, gas, oil). The inclusion of this category was deemed necessary for several reasons. First, the severance of minerals from surface land is quite extensive in Appalachia, particularly in the central Appalachian coal counties. Secondly, previous studies and the current projections for energy development in the region place particular emphasis on the ownership patterns evident in mineral rights. Ownership in this area is also one of the most difficult types of ownership to keep abreast of, since it is constantly changing, except in a few central Appalachian coal counties with long established patterns of concentrated ownership. It was assumed that mineral acreages would be readily available from the county tax rolls. However, this was not always the case.

The difficulties encountered in determining surface ownership acreages were also evident in the attempt to enumerate mineral acreages, but there were other problems unique to the latter. These problems were due both to the inadequacy of county tax rolls and to under-reporting of ownership by coal companies. Such problems were acute in Kentucky. County tax rolls usually do not include acreage figures and assessments for minerals. A few counties did have this information on the rolls, but most did not. Sometimes it was possible to get limited information on coal and other mineral ownership, but systematic tract-by-tract ownership was difficult to determine. To complete this information, it was necessary to copy the data separately from computer print-out sheets issued to each county by the State Department of Revenue. It still was not possible to obtain these figures in five of the survey counties. As a result, total mineral acreages for Kentucky are significantly under-recorded in our aggregate ownership analysis. Mineral acreages were later obtained for some of these counties and included in the county profiles, though not in the aggregate summaries of ownership.

Efforts by the Kentucky Department of Revenue to assess coal property between 1976-78 indicate that some companies may not report accurately their mineral acreages. They attempted to determine coal ownership by mailing questionnaires to known coal owners, asking them to list the total mineral rights owned in any given county and then to estimate how much of that total acreage contained coal. The resulting information was sent out on computer print-outs to local tax assessors to be used in determining how much any given company should be taxed. The inconsistencies were dramatic in several cases. For example, in Breathitt County, Falcon Coal Company reported that only 1,002 acres of its 66,928 acres of mineral rights in the county contained any coal. Thus, county records would have shown Falcon owning only 1,002 acres for tax purposes. In Perry County, Kentucky River Coal Company reported that only 26,272 acres of its 75,011 acres of mineral rights contained coal. Both of these companies paid taxes on the smaller acreages and had not other information been available, the smaller acreage would have appeared to be their total ownership. Understandably, the state of Kentucky abandoned this effort to assess coal ownership in 1978.

In Alabama severed mineral rights also often go unrecorded in the county tax books. When they are recorded, they are usually not designated as mineral rights. However, these can usually be detected by the low assessment on them, since they are so much lower than the assessments on surface land. In the other states where minerals are significant, mineral rights are usually recorded separately in the land book, but the reliability of the data is open to question. Often these mineral acreage figures are dependent upon the willingness of owners to disclose their holdings. As was indicated in the effort of Kentucky to document mineral ownership a few years ago, such owners are not noted for their willingness to share that information.

Mineral Type

Mineral type was included to take into account the variations in mineral ownership in Appalachia. The categories designated were coal, gas and oil, other and combination. The *other* category was to account for mineral ownership in non-coal sections of Appalachia and might include such minerals as zinc, lead, mica, stone, etc. Two problems arise in the determination of mineral type; one from the nature of courthouse records, the other from our definitions of ownership. First, most counties do not record types of mineral, but refer simply to mineral ownership. Secondly, many of the mineral rights (particularly for oil and gas) are leased rather than owned outright. Though leases constitute a form of ownership, it was not possible, given the limitations of this study, to do a thorough study of leasing. Also, leases are often either not recorded in the county records or are recorded in a source separate from the tax books.

Land, Building and Mineral Values

These categories were designed to ascertain the appraised values of land, buildings and minerals owned by any particular owner. This would in turn allow us to get some idea of the relationship between the value of the holding and the actual taxes paid on that holding. Once again, the variations in recording systems and assessment practices of county tax assessors posed some problems. The assumption that appraised values would be consistently available from the county tax books turned out not to be universally true.

The major problem that field researchers confronted was that some records included only assessed values,while others listed the appraised value. For instance, in Alabama the valuation is the assessed value, which is supposedly a fixed ratio of the fair market value of the property at its highest and best use, that ratio is further complicated by the fact that it depends on the classification of the property into residential, commercial, etc. Those classifications were not often documented on the tax rolls. Case study interviews indicate that such assessments may at times actually be set by the owner of the property. In other words, people would simply tell the assessor what their property was to be assessed at and this assessment would stay on the books until there was some specific reason for changing it (e.g., the property is sold). If this is the case, then the assessments recorded on the tax rolls may not be an accurate reflection of the property's worth.

In West Virginia the values listed were also assessments rather than appraisals. As in the case of Alabama and any other counties in the study in which assessments were recorded, it was necessary to convert the assessed value to an appraised value.

This was done by identifying an assessment to appraisal ratio for each county. While this is relatively fixed in most counties and thus easy to document, it was in some cases complicated by the flexibility given the local assessor in establishing assessments. For example, in West Virginia each assessor has the power to establish assessments as long as they fall within 50-100% of the state's periodic appraisals. Upon investigation, it was found that some assessors just assess at a percentage of "true and actual" or "market" value. There was evidently no standard way of determining the true value of property. Thus the ratios used to translate assessment to appraisals in West Virginia were approximate.

It was also necessary to convert from assessed to appraised values in most of the Virginia counties. Even though Virginia has enacted a tax law requiring assessment at 100% fair market value, only two of the survey counties (Bland and Wythe) were in compliance in 1978. In the remaining counties, valuation of land, building and minerals in the land books represents assessed values. In some North Carolina counties there was a problem determining whether to record appraised value or deferred value. State laws allow for the option to defer if the property is not currently being used at its highest potential use. Appraised values were recorded by the researchers so as to maintain consistency and comparability.

One other problem became evident in documenting the values of land, building and mineral properties. In many counties these values were not recorded separately on the tax rolls. In North Carolina, for instance, land and building values were often combined into one figure for tax purposes. It was impossible, in such cases, for the researchers to distinguish true land values. Thus, the combined value was coded. The result was an initial over-estimation of value per acre for land and on under-estimation of building values. This problem was also encountered in some counties in Alabama (e.g. Tuscaloosa).

This concern also arose in some of the coal counties in which mineral and land values were not recorded separately. In some West Virginia counties, the value of surface and minerals are often combined so that there can really be no ready determination of mineral value alone and thus no value to sum against total mineral acres. While acres were totalled separately as surface or mineral the combined value was coded under surface. Thus the total surface was over-valued and the total mineral under-valued, initially distorting value/acreage computations. For fee simple land in Blount County, Alabama the same was true: mineral values were not shown as separate from land values. While minerals were taxed, they were listed in some cases with the land value.

Tax Paid

This category was designed to document the total taxes paid on any given property holding, whether land, buildings or mineral (i.e. taxes on real property). Caution was exercised to avoid the inclusion of taxes paid on equipment and personal property. However, in a few instances it was difficult to tell with certainty whether the tax paid included both real and personal property. Generally speaking, any problems in coding taxes paid arose from the problems in documentation of ownership that have already been discussed.

In many cases it was impossible to determine the taxes paid by utilities since they were not on the county tax rolls. This was particularly true where the relevant state agencies deemed such information confidential. Both acreages and taxes paid are missing from several Alabama counties. In West Virginia, there are partial utility acreage figures along with their valuation. These figures were included in corporate totals, but the taxes paid were not. As a consequence, the taxes paid on minerals were not available in some counties in Kentucky, as were the acreages.

Name, Address, Zip Code of Owner

The name, address and zip code of the owner was recorded directly from the tax rolls. The coding categories are fairly self-evident. The categories were essential for determining the type and residence of the owners. The difficulties discussed in those sections are applicable here (e.g. determining whether an address is within or outside a county, establishing who is the real owner in the case of corporate ownership). The inclusion of zip codes will enable someone to group the owners according to zip codes, thus establishing some residence patterns for non-local owners.

In conclusion, the coding categories used in the survey phase of the research will meet the needs of the citizen researchers involved as well as the demands of computer analysis. When data was missing, it was recorded as such. However, the use of other information sources enabled us to supplement the data found on the county tax rolls. The result is a very adequate survey of ownership, given the limitations of time, money, and information sources.

County Case Studies

Whereas the survey phase of the study documented land ownership, use and taxation patterns, the case study phase explored the impacts that those patterns have on local communities. In this phase, 19 counties were selected from the 80 survey counties for more intensive investigation of the impacts of land ownership patterns, current and past trends, and local response to those patterns and trends. By its very nature the survey phase could not provide the above information since it only provides a documentation of ownership at one point in time. Although interviews with county tax assessors at the time of the survey provided some clues as to trends in ownership, they were usually limited to the changes evident in the tax books.

Within social science research, case studies may serve two distinctive purposes. If the state of knowledge about the area of investigation is sufficient to elicit well-defined and specific hypotheses,then case studies may serve to test those hypotheses. However, if the existing state of knowledge is insufficient to develop such hypotheses, case studies serve the exploratory purpose of identifying the important relationships between variables within some designated social entity (e.g., group, community). Our case studies were of the latter type, designed to be open-ended and exploratory investigations of the relationship between land ownership patterns and other variables on the county level. Selection of those variables was informed by the findings of previous studies, other literature about Appalachia, and, most importantly, the experiences of local citizens in those counties.

In general, the information that contributed to the case studies was derived from three sources: the land ownership survey, available documents (including aggregate socio-economic data), and interviews with selected county residents. (See Table 1, next page for a presentation of the sources of information utilized for the exploration of particular land related issues.) Interviews were considered critical to the elaboration of relationships suggested by the survey and aggregate data and the identification of other relationships not readily apparent there. Interviewees were chosen on the basis of two general, non-exclusive criteria: a) that they occupy a position in the county or have experience that would indicate familiarity with the dominant land ownership patterns and related issues (e.g., tax assessors, registrars of deeds, county and regional planners, real estate agents, etc.); b) that as a group they be representative of the different segments

TABLE 1 (Continued)

PRIMARY FACTOR	POSSIBLE LINKAGE	SOURCES OF INFORMATION	
		Aggregate	Interview
C. FISCAL DEVELOPMENT			
Sources of County Revenue	Concentration of non-taxed or under-taxed land	Land survey data, census info., reports of various federal and state agencies, Census of Govts., planning documents	Members of county governing boards, forest service and TVA representatives, commissioners of revenue, county treasurers.
Tax Rates	Land use, political and economic influence	Land survey data, state tax laws, tax records, company reports, local newspapers.	Tax assessors, members of boards of adjustment or equalization, members of tax protest groups, representative land owners
County Budget Allocations	Tax revenues produced, new needs created by land use.	County budget, Census of Govts.	County officials, local school board members, teachers, students, parents, service agency heads, members of various client groups, etc.

of the local population (e.g. property owners and non-owners, large landowners and small, management/business and labor, etc.) In neither instance were interviewees chosen at random; thus, they do not represent the local population in other than the manner described above. These general criteria were used in regional and state training sessions to help the field researchers prepare a tentative list of the types of people to be interviewed in their counties. Final selection of interviewees was left to the field researcher in the case study county.

The following examples will illustrate the results of the implemention of these criteria in several states. In Kentucky, for example, interviews were conducted with local government officials, housing officials, state officials, resident citizens of the county, labor leaders, mining employees and operators, [illegible]l. The North Carolina researchers interviewed long-time local residents, county and state service delivery personnel, land development people, policy-makers, and major land holders. In West Virginia, the types of people interviewed were: county officials (especially members of the county commission and the tax assessor); service agency personnel (including planning and education); and interested, knowledgeable local residents. The same pattern of interviewee selection prevailed in the other states. In all cases, interviewers were advised to explain the purpose of the land study project and the interview to the interviewee.

The precise questions asked interviewees varied from county to county, since they were in large part dependent upon the dominant land ownership patterns and land-related issues in any given county. However, certain relationships were to be investigated across the counties: economic development, particularly diversification and services infrastructure; community development, especially housing, environmental quality, and social services; and fiscal development, including sources of county revenues, tax rates, and county budget allocations. (See Table 1 for further elaboration of these areas.) Historical questions regarding changes in land tenure were also considered important in all case study counties, since such changes are not usually evident from the tax rolls.

Given these considerations, field researchers were provided with a flexible checklist of possible relationships for investigation during the initial training session. Interviewers were further encouraged to use an open-ended format, conducive to the exploration of additional relationships that became evident in the research process. An example of the subjects about which questions were asked is provided by the North Carolina task force. Their questions included at least the following topics of investigation: employment, land tenure, road construction,

TABLE 1: POSSIBLE RELATIONSHIPS BETWEEN LAND OWNERSHIP AND/OR USE AND PRIMARY FACTORS ASSOCIATED WITH ECONOMIC, COMMUNITY AND FISCAL DEVELOPMENT

PRIMARY FACTOR	POSSIBLE LINKAGE	SOURCES OF INFORMATION	
		Aggregate	Interview
A. **ECONOMIC DEVELOPMENT**			
Diversification	Availability of land for industrial establishments	Land survey data, city/county data book, Census of Agriculture, county business patterns, local development districts	Local businessmen, corporate representatives, local workers, planners
Infrastructure	Availability of land, generation of local capital	Census information, State Dept. of Hwys., local development districts, land survey data	Local highway engineer, bank officials, members of Chambers of Commerce and planning boards, corporate representatives
Labor Force	Availability of land for housing and industry	Census information, Labor Dept. local unemployment office, annual company reports	Company officials, representatives of labor, personnel of local unemployment office, employed and unemployed workers
Industrial/Agricultural Productivity	Land availability for agriculture and industry due to concentrated ownership and incompatible uses	Census of Agriculture, census info. e.g. City/County Data Book, Census of Manufacturing, state mining statistics, planning documents	Local farmers, mining company officials, miners agricultural extension agents, local businessmen and factory managers, factory workers

TABLE 1 (Continued)

PRIMARY FACTOR	POSSIBLE LINKAGE	SOURCES OF INFORMATION	
		Aggregate	Interview
B. COMMUNITY DEVELOPMENT Housing	Effect of concentrated and non-local ownership on land availability	Census Info. (e.g. ensus of ousing),local housing authorities, development districts, local newspapers	Local owners, local renters, real estate agents, planners, residential developers, members of housing groups
Environmental Quality	Effects of various types of land use on the environment	208 Report, if available, Dept. of Natural Resources, strip mine permits, environmental impact statements, local newspapers, occasional newsletters of environmental groups	Dept. of Natural Resources officials and inspectors, strip mine operators and lessors, resort developers, local planners, representatives of environmental groups, citizens in impact areas
Public Service Agencies	Availability of land, tax revenues, political influence, and the creation of new needs.	Census Info., Dept. of Welfare, Health Dept., Census of Governments, State Dept. of Education, Depts. of Correction, etc.	Clients of local service agencies, users of local recreational facilities, representatives of the various service agencies, members of welfare boards, school board members.
Political and Civic Participation	Political and economic influence of concentrated land ownership or of large land owners	Census Info., newspapers, lists of local board members, company profiles	County politicians, members of civic organizations, company representatives, large land holders, small land holders, ordinary citizens
Cultural Stability/ Change	influence of non-local ownership on local attitudes and behavior	Local newspapers, census info.	Long term residents, relative newcomers, ministers

service delivery, role of government, housing, industrial development, agriculture, recreational development, and politics. The aim was to explore what impact, if any, land ownership had on any of those indicators.

The major problem with the interview technique as a mode of investigation seemed to stem from the controversial nature of land ownership and control in Appalachia. As a result there was in some areas a reluctance on the part of the interviewee to discuss the specifics of land ownership and its impacts in their county. This reluctance was expected, since certain people may have very good reasons for not being quoted on such a sensitive matter as the ownership and control of land. For instance, one respondent in a Kentucky county feared for his job if his views on ownership in the county became known. This reluctance varied somewhat from area to area, evidently depending on the history of land ownership and the extent of related economic and political control in the county. For example, in Virginia there seemed to be greater reticence to discuss the impacts of land ownership in the coal counties than in the traditional agricultural counties. In spite of such limitations, there were several outstanding examples of openness in the discussion of such issues in most states.

While some are reluctant because they fear for their jobs or family, others are reticent for other reasons. In many instance it seemed merely to serve the interests of maintaining positions of privilege or protecting the power of major landowners. In Tennessee, for instance, local officials were hesitant to discuss at any length matters of a controversial nature, and many of the major landowners (or their representatives) were simply uncooperative and distrustful. Thus, many such interviews failed to provide as much information on land ownership and its impacts as was anticipated.

Some of the types of reluctance mentioned above can be countered by careful selection of interviewers and the patient development of rapport between the interviewer and interviewee. The use of local interviewers was sometimes helpful, but in cases where they were representatives of citizens' action groups, the reluctance of certain respondents may have increased. Assuring the anonymity of the person interviewed was also at times conducive to greater openness. Yet, it is probable that not every respondent will feel free enough to speak openly, whether on or off the record. The selection of respondents representing a broad segment of the local community served to insure that most issues would be discussed freely by someone.

A second source of information for developing county case studies was that myriad of available documents containing information about the county. Since many of the local field researchers were unfamiliar with the available documents and where they might be located, part of the training sessions was devoted to the identification of such supplementary sources. Information was also provided on the likely local and regional depositories of land-related materials. Additional information was provided by the regional staff (e.g. census information). This phase of the case study utilized information from a variety of sources. It included a thorough review of publications covering the history and development of the county, analyses of various census information, regional planning documents and other available data. Sources for this information were: local planning districts, comprehensive county plans (where availabe), appropriate state agencies (e.g. Department of Employment Security, Department of Miners, Department of Education, Department of Agriculture), relevant federal agencies (e.g. National Forest Service), censuses, county budgets, local and regional newspapers, etc. (For further elaboration of these sources, see Table 1.) The major problem with much of this information is that its quality varies greatly and it is often out-dated. However, when used with due caution and in combination with other types of information, it becomes a useful resource for analyzing the impacts of land ownership on the local level.

The third source of information comes from the survey phase of the land ownership data itself. As indicated earlier, the land ownership survey provides the basic documentation of land ownership, use, and taxation patterns in each county. Such information serves to orient the case study investigation in the sens that the survey identifies dominant patterns of ownership and use and patterns of assessment of various types of land. Thus, it helps to define the questions asked as well as the people interviewed. In turn, the case study interview findings facilitate the interpretation of the survey data by pointing to areas of greatest local relevance. The resulting profiles of ownership, use and taxation in the county take on added meaning as the context of their development and impacts is understood.

In summary, then, the case study reports utilize the varied data sources employed in the study as a whole: the land ownership survey, interviews, and available documents. While the interviews are considered the primary component of the case study investigations, the three resources in combination provide cross-checks against each other and thus give us a fuller picture of land ownership and its impacts at the county level than could be provided with either data source, taken by itself. In part because they help provide a more wholistic understanding of land ownership impacts, the case studies are important components in the development of an understanding of land ownership at the state and regional levels.

Statistical verification of much of the information in the case studies, particularly that obtained through the interview process, is not possible, nor was that the purpose of the case studies given their exploratory nature. The interviews were not intended to randomly represent the population of those counties. Instead they were chosen because they were thought to possess valuable insights and/or experience pertaining to the impacts of land ownership in their respective counties. While this expectation was not always fulfilled to the extent anticipated, the interviews as a whole serve to identify, illustrate, and elaborate the real and perceived impacts of land ownership patterns.

The case study counties also do not constitute a representative sample of all the counties in the survey in the statistical sense of being randomly chosen. As discussed earlier, case study counties were chosen with specific purposes in mind, one being that the three types of counties be represented among the case stuides. This was the case, and thus the county case studies serve to broaden our insights into land ownership impacts in those types of counties. Whether the findings in any particular county can be generalized to all counties of that type of to the region as a whole is a matter for later investigation. Exploratory case studies such as these do, however, illuminate, identify and elaborate the daily experience of living with particular land ownership patterns.

Aggregate Socio-Economic Data

For all of the 80 survey counties we collected socio-economic data that would help us in identifying more specifically the impacts of land ownership patterns on individuals in the local community as well as the health of the community itself. The collection of such data allowed for the exploration of relationships that might be anticipated on the basis of case studies and previous studies and literature. Information was chosen on the basis of its possible relevance to land ownership, use, and taxation patterns as indicated by the above sources and the various citizen's task forces involved in the study. In all, over 100 variables were compiled and coded for each of the 80 counties. The data can be grouped into four basic categories: land use, economic impacts, community impacts, and fiscal impacts (see Table 2).

Much of this information was provided by the data bank of the Appalachian Regional Commission: other information came from available sources such as the *Agricultural Census*, *Census of Government*, *Housing Census*, etc. The information wa collected for county units so as to facilitate the correlations between it and and relevant land ownership information. While its quality varies considerably and some of it is somewhat dated, it does provide us a means of correlating land ownership patterns to various indicators of community and individual well-being. When this analysis is combined with the in-depth insights of the case studies, we should be able to identify the most significant impacts of land ownership.

Table 2: SUMMARY OF AGGREGATE DATA COLLECTED FOR 80 COUNTIES

TYPE OF DATA COLLECTED	SOURCE	DATE
Land Use Data		
Known Coal Reserves	ARC* Atlas	1973
Known Coal Production	Ohio River Basin Energy Study	1977
Known Agricultural Data	Census of Agriculture	1974
Economic Data		
Income Characteristics	ARC Data Bank	1970, 1974
Labor Force Characteristics	ARC Data Bank	1970, 1977
Employment Characteristics	ARC Data Bank	1970, 1977
Banking Deposit Characteristics	City County Data Book	1976
Industry Characteristics	Census of Manufacturing Census of Mining	1972 1972
Agricultural Characteristics	Census of Selected Service Industries Census of Agriculture	1972 1969, 1974
Community Data		
Migration and Population Characteristics	ARC Data Book	1970,1975
Housing Characteristics	Census of Housing	1970
Health Characteristics	ARC Data Bank	1974
Education Characteristics	Census of Population	1970
Fiscal Data		
County Revenue Sources	Census of Governments	1977
County Budget Expenditures	Census of Governments	1977
County Property Taxes	Census of Governments	1977

*Appalachian Regional Commission

Processing, Verifying and Analyzing the Data

The data collection in the previous three phases of the project produced a vast body of material. From the survey of landowners on the tax rolls, data was collected on over 55,000 parcels of land and minerals. Field notes and drafts of twenty case studies amounted to some 1500 pages. Some 100 socio-economic variables were collected on the 80 counties studied. The quantity of material presented a major task of processing, verifying and analyzing. Below is a summary of the steps taken.

The Survey Data

The 16 variables on the coding sheet were collected for 55,000 parcels of property giving over 800,000 pieces of information. Using facilities at Appalachia State University, this data was keypunched and fed into a computer. Printouts of the information were then provided for each county and returned to state coordinators for checking and verification. Further research was done at this point on the ownership and residence of major owners. As described earlier, attempts were made using standard financial sources to determine whether a company was independent or a subsidiary of a larger firm. If a subsidiary, the address of the headquarters of the beneficial owner, rather than the local address that might appear on the tax books was used to determine residence. Corrected data was then re-keypunched and re-entered into the computer for analysis.

The analysis of the data included: computing the number of owners and percent of sample and county owned for surface and mineral owners by nature of owner (individual, corporate, and public) and by residence of the owner (in-county, out-of-county, out-of-state); ranking the owners according to size; computing indices of concentration (i.e., the distribution of acreage among the owners); calculating the taxes paid per acre for surface, minerals, and buildings; analyzing the distribution of the taxes paid among owners by nature, residence and size; and sorting acres and owners by land uses and mineral types. In this process of aggregating and analyzing data, a number of new variables were created, in addition to those on the coding sheet. These are discussed below:

1. Owners Listing: The first major task in analyzing the data involved the fact that one owner could own a number of parcels, in one county or across counties Since ownership rather than parcelization was the problem being studied, these parcels and related data had to be "collapsed," i.e. summed by owner. A difficulty

was the fact that across counties and even within counties, the same owners would be referred to in different fashions: e.g. Consolidated Coal or Consol, and the computer would list them as separate owners. At the county level attempts were made in the corrections process to standardize names of the same owner. Then, an owner's listing was created, producing 33,000 owners from the original 55,000 parcels.

Across counties or states, however, this "collapsing" process was often not possible to do on the computer in the time available. Where lists of large owners are created in the study, e.g. the top 20 owners in a given state it was possible manually to combine various holdings of onw owner and its subsidiaries. However, where aggregate calculations were done, involving such factors as number of owners, or percent of owners, it was not always possible to combine holdings of the same owner, if the owner's name or title varied. As a result, these calculations will overstate the number of owners and understate the degree of concentration of holdings in a few hands.

2. Percent of County Owned and Percent Sample Owned: Calculations of the percent of land owned by various types of owners and for various uses are done in two ways. The first involved the percent of the acreage owned in the sample. The second involves the percent this represents of the total county surface of (depending on the unit of analysis) of the total surface of the counties surveyed in each state, in each type, or in the whole sample. In the case of mineral rights, percentages are given as the percent of minerals in the sample, or as a percent of the county surface (since the total number of mineral acres in a county could not be determined). Overall, using the cutoff points earlier described, the land in the sample accounts for 53% of the land in the eighty counties, and the mineral acres are the equivalent of 22% of the county's surface. Care is taken throughout the report to specify which indicator is being used.

One should recognize, however, that where percentages of a county are given, these refer only to the acres in the sample examined as a percent of the county. For instance, when one says that 30% of the land in a county is corporately owned, this refers only to the land in the sample (i.e. above the 20 acres cut-off) as a percent of the county's total surface. This likely will understate the amount of land which actually is corporately owned, due to additional acreage owned by corporations too small to be sampled.

3. Concentration Indices: In the study, concentration--the degree to which land is held amongst few owners or dispersed among several owners--has been measured in two ways. The simplest index was obtained by dividing the percent of land owned by the top X percent of owners in the sample by the percent of land owned by the bottom X percent of owners in the sample. The higher the index, the greater the concentration; the lower the index, the lower the concentration. Generally, this was measured as the ratio of the amount of land owned by the top 25% of owners in the sample divided by the amount of land owned by the bottom 25% of owners in the sample.

The second more technical index used is the Gini co-efficient, a standard measurement for the distribution of income based on the Lorenz curve. This method was developed for measuring concentration of land ownership by Gene Wunderlich in "Concentration of Land Ownership,("Journal of Farm Economics, SL(5), December 1958, pp. 1887-1893). In his terms, "The area between the Lorenz curve and the line of perfect equality represents the degree of concentration....The Gini ratio of concentration is simply the ratio of the area between the Lorenz curve and the line of perfect equality to the total area of the triangle found by the two axes an the line of perfect equality."

As used, both indices understate the degree of concentration of ownership actually present. First, the concentration of ownership can be given only amongst the owners sampled, not for all owners in a county (as this information was not collected). Secondly, on the aggregate level, it was not always possible to combine all parcels owned by the same owner, across all counties (though this was attempted, as explained above).

4. Property Valuations: Values recorded on the tax books were collected for surface, minerals and buildings. However, as discussed earlier, in some cases, depending on state and county procedures, these values represent the full appraised value of the property; in other cases, they represent an assessment, or a percentage of the appraised value. Attempts were made to standardize the values by multiplying the assessments by 1/assessment ratio. However, the assessment ratio was often arbitrarily or randomly determined by the assessor; and even where the appraisal was supposed to reflect the full value of the property, it often did not. Attempts were made in some cases to conform the meaning of the values by using the assessment ratio given in the Census of Governments. However, these were only available in certain counties. Due to these difficulties, discussion of taxes is usually based on the bottom line: actual taxes paid per acre, rather than on apprai values.

4. Taxes/Acre. The inadequacy of the appraisal as a method of comparison meant that new calculations had to be made to obtain a tax/acre figure. The problem here arose from the fact that the "tax paid" column on the tax books reflects the taxes paid on the sum value of the surface, minerals and buildings. In order to determine what proportion of the "taxes paid" could be applied to which component, new calculations had to be made. In order to do so, total valuation in each county was divided by total taxes collected in order to get a tax rate for the sample in that county.* The rate was then applied to the value of each component: surface, mineral, buildings--to determine what proportion of the taxes paid came from each category. Those figures were then divided by the total number of surface acres, mineral acres or building lots in order to determine the surface tax per acre, mineral tax per mineral acre, or building tax per building lot.

In the case of mineral taxes, this procedure means that the figure of mineral tax per mineral acre obviously refers only to the value of those mineral acres which are listed for tax purposes. Where minerals are not listed at all, as is often the case, or where their value is reflected in the surface value, as is sometimes the case in West Virginia, the mineral tax per mineral acre will overestimate the actual tax on the mineral rights.

6. Percent of Property Taxes Paid: In order to get a yardstick for measuring the proportion of property taxes paid by types of landowners, a measure was needed of the total property taxes collected in the county. This figure was not collected, however, in the field work. Therefore, the total property taxes have been taken from the 1977 Census of Governments. The percent of property taxes paid by a category of owners (e.g. absentee or corporation, etc.) is determined by dividing the total taxes paid in the survey by that category of owners by the Census of Government figure for the total property taxes collected. The measure is crude, for two reasons: First, while the survey data provided the total real estate taxes (including in some instances, equipment), the Census of Governments figure included all property taxes, including some on intangible property. Thus, the figure here must be understood to mean the amount of real estate taxes paid, as a percentage of all property taxes paid, not just real estate taxes, and thus the figure may understate the actual tax burden. The second problem, on the other hand, may overstate the tax burden. While the Census of Governments figure is for 1976-77,

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*The tax rate is an "internal" rate for the sample and may not correspond precisely with the tax rate used for actual taxes.

the survey data is for two or three years later, depending on the state county, during which time taxes paid may have increased. Despite these difficulties, spot checks revealed the figure to be close to accurate, except in West Virginia, where the total property taxes paid changed greatly between 1976-77 and 1978-79 in counties where new mineral taxation procedures were applied. To correct this, for the state and county profile analysis, in West Virginia the 1978-79 real estate taxes figure has been substituted for the Census of Governments data in order to give a more accurate estimate of actual tax burden.

Levels of Analysis

Thus computed, the aggregate data was then analyzed on four different levels: by county, by state, by sample (region) and by county type. In each case, the data used represents the sum of the totals for the survey counties in that category, i.e. the total surface acres in West Virginia refers to the total surface acres in the survey counties.

This procedure needs clarification in the case of "absentee" ownership. The definition of "absentee" as being out-of-county or out-of-state remains in reference to the county, regardless of the unit of analysis. That is, for example, the percen of land absentee owned in a particular state still means the percent owned by owners not residing in the county where holdings are located, rather than the percent not residing in the state where the holdings are.

In certain instances data on the regional level was also analyzed for predominantly rural counties, i.e. those with over 50% of the population living in non-urban areas. For instance, patterns of housing occupancy are likely to vary from rural to urban areas, independently of ownership patterns. Combined with counties for which certain data was not available this provided 72 rural counties in the sample.

Types of Counties

As described in earlier discussions, past studies of land indicate that ownership patterns and their impacts may differ by the varying types of economic activity for which the land is used...i.e. the types of land-based economics that exist. As Chapter I suggests, three types of land-based economic resources are expected to be particularly significant in predicting ownership patterns and impacts in Appalachia. These are coal reserves and coal production, agricultural or farming, and level of rural tourism and recreation. In order to test these relationships further, counties were typed according to the importance of these land based economies within them. To so do, objective measurements had to be found to allow easy classification of counties. Since the argument is that the economic importance of land-related industries helps to define how the land is owned and used, then the measure had to be independent of ownership characteristics or use characteristics. In the case of determining coal types, the level of known reserves was used as the measure (the level of production was not used as it does not tend to measure the speculative importance of holding coal land for the future). In the case of agriculture, the value of agriculture sales, as determined by the 1974 Census of Agriculture was used. In the case of tourism/recreation, such standard indicators are not readily available. However, if the argument is that the tourism and recreation industry is associated with ownership and use patterns, then one measure of the importance of the industry might be the degree to which it is dominant amongst the service industries in a county. Thus, using the Census of Selected Service Industries, a measure was developed which combined the percent of service receipts in hotels, motels, trailer parks, and campgrounds plus the percent of service receipts from amusements and recreation industry. While each of these indicators no doubt could be refined further in the future, they did serve the typologize the counties under study. The following table details further the methods used:

Table 3: DEFINITIONS OF TYPES OF COUNTIES

COUNTY TYPE	NUMBER OF COUNTIES	DEFINITION	SOURCE OF DATA
Coal Counties			
High Coal	42	Known coal reserves greater than 100 million tons.[1]	Atlas of Environmenta and Natural Resourc in Appalachia, ARC, 1977
Medium Coal	16	Known coal reserves less than 100 million but greater than zero.	
No Coal	22	No known reserves.	
Agricultural Counties			
High Agriculture	33	Total value of sales is greater than $5 million.	Census of Agriculture, 1974
Low Agriculture	47	Total value of sales if less than $5 million.	
Tourism and Recreation Counties			
High Tourism	19	Percent of service receipts in tourism and recreation greater than 24.4%[2]	Census of Selected Service Industries, 1972
Low Tourism	52	Percent of service receipts in tourism and recreation less than 24.4%	

1. Refers to bituminous and semi-anthracite coal resources remaining in the ground as of January 1, 1973.

2. This includes percent of service receipts in hotels, motels, trailer parks and campground plus percent in amusements and recreation. Counties with both variables missing were excluded.

One should note that these categories are not mutually exclusive, theoretically or empirically. It is possible for one county to have a high level of coal reserves and high level of agricultural sales. (In practice, however, each economic activity has a negative association with the other.) This allows comparative discussion within types of counties (e.g. comparing high agriculture to low agriculture counties) and amongst types of counties (e.g. comparing high coal areas to high agricultural areas).

Review, Analysis and Utilization of Case Study Data

The case studies went through a rigorous process of verification and review prior to their final inclusion in the state reports and the utilization of their data in the state and regional reports. As indicated earlier, the case studies made use of information from the land ownership survey, interviews and available documents, a combination of data sources that provided considerable opportunity for verification. Field notes kept by the local researchers also helped to clarify the context of certain information.

Verification and Review

Initial drafts of the case studies were written by the local researcher who had accepted primary responsibility for doing the interviews and collecting the available data for that county. Working in cooperation with their state coordinators and task forces as well as with additional information provided by the regional staff, these researchers constructed a comprehensive account of the major impacts of land ownership patterns in their county. Once an initial draft was completed, following the general guidelines worked out in earlier training sessions, it was forwarded to the state coordinator. The state coordinator then reviewed, edited and where necessary, verified information in the case study. At this stage additional information not available from local sources were often incorporated into the study. Then, the case study was forwarded to the regional staff, where it was reviewed for content, format, and comparison to other case study drafts. Statistical data in the studies were checked against similar data collected at the regional level. Information from interviews was also checked against other sources when possible, although the perceptions revealed in interviews were treated as important reflections of local opinion nevertheless. After additional editing by the regional staff, the case study was again sent to the state coordinator with corrections, suggestions and any additional information from the regional level.

The state coordinator was then responsible, in collaboration with the original author, for writing a revised draft of the case study. Once revised, the draft was returned to the regional staff for final editing and any additional verification.

Utilization of Case Studies

Case studies were utilized in two distinct ways in the overall context of the study; as entities unto themselves and as essential sources of information for the state and regional reports. First, the case studies are important, in and of themselves, as comprehensive accounts of the impacts that land ownership and use patterns can have on a particular locality. Their issue orientation allows the opportunity to understand these impacts as local residents see them. Thus, the case studies are included in their entirety as part of the state reports. The combination of data used provides a unique chance to examine both the objective account of these impacts and the reaction of local residents to them. It is at the local level where the impacts of ownership, both positive and negative, must be lived with. The individual case studies stand as documentation of how local residents manage to do that. Thus, while an integral part of the total land study, each case study can be considered by itself.

The case study research also influenced the state and regional reports in two ways: by helping to define the most important issues relating to land ownership and then by offering personal confirmation of those impacts on the everyday lives of local citizens. First, interviews with local residents and the accumlation of other data from local agencies helped identify the problem areas to be dealt with in the discussions of impacts in the state and regional reports. Such information was crucial in final decisions about the impacts that deserved extended discussion. These issues were identified through a perusal of all the case studies, with particular focus on the issues mentioned in interviews with local residents.

Once decisions were made as to the most important impact areas (e.g. housing, agriculture, economic development, energy development), we returned to the case studies for a more thorough investigation. Using techniques akin to content analysis every interview quote dealing with a particular impact area was elicited from the case studies (as was other information not already available at the state or regional level). This procedure was repeated for all the impact areas as well as for the sections on land ownership and taxation. Once these were compiled, they were incorporated into the relevant arguments in the state and regional discussions of land ownership and its impacts. Case study information served to illustrate, contradict, or raise questions about data from other sources. The utilization of case study information from counties representative of the major types of counties allowed us to see more concretely the local manifestations of land ownership patterns and their impacts in coal, agricultural and recreational counties.

Aggregate Data Correlations

The analysis of the survey data produced a number of land ownership characteristics in the eighty counties. Case study analyses often suggested socio-economic impacts related to land ownership patterns. In order to test these relationships on an aggregate level, correlations were tested between the land ownership characteristics and certain socio-economic variables for the eighty counties.

Land ownership characteristics were based upon the percent of the county owned by varying types of owners (rather than the percent of the sample). Ten land ownership characteristics were developed (as "independent" variables) to correlate with the socio-economic variables ("dependent" variables), to aid in discovering the impact of absentee, corporate and government holdings in the counties studied. These characteristics were:

1. Percent of county in corporate ownership.
2. Percent of county in public (government + private non-profit) ownership.
3. Percent of county in corporate + public ownership.
4. Percent of county owned by out-of-county by in-state owners.
5. Percent of county owned by out-of-state owners.
6. Percent of county owned by non-local owners (4+5).
7. Percent of county owned by absentee corporate and government owners.
8. Percent of county owned by absentee + corporate + government owners (i.e. all owners coded but local individuals).
9. Percent of county owned by non-local individuals.
10. a. Concentration of ownership (percent of land owned by top 25% divided by percent owned by bottom 25%).
    b. Concentration of ownership (Gini co-efficient).

To test the impact of mineral rights, the same variables were developed for the mineral ownership, (expressed as percent of surface ownership). Where these are used, they are with the qualifier that mineral ownership is somewhat incomplete due to the inadequacy of county records discussed earlier.

For certain relationships, as shall be seen in the study, the ownership of surface and mineral combined strengthens the effect that each may have by itself. This particularly may be the case where mineral rights are severed from surface rights. Corporate or absentee control involves both ownership of surface and mineral ownership. To understand this phenomenen better, the above ownership indices were also developed for percent of surface owned plus percent of mineral owned. As mineral rights alone, this "index of resource control" must be used with the recognition of limitations of mineral rights data.

These indicators of ownership patterns in each county were then correlated with a number of other socio-economic indicators which had collected for the 80 counties. Emphasis was placed on correlation to land use indicators, economic indicators, social indicators, and fiscal (county finance) indicators (see earlier lists). Three correlation measures were computed: Pearson's R, Spearman's and Kendall's Tau. Of these, only Pearson's R, being one of the most stringent tests for determining the relationship between two variables, was used in the analysis.

Correlation of the 11 independent variables, for surface, mineral, and mineral plus surface with approximately 50 dependent variables by total sample and county types produced over 13,000 correlations to be analyzed. Obviously, this was an impossible task in the time frame available. Methods had to be developed for selecting only the more important relationships. Moreover, recognizing the uncertainties of this type of analysis in its present scientific state, strong significant tests were to be applied.

In order to select important relationships and to test their significance, the following criteria were used.

1. The Pearson's R correlation was used only if a) the level of probability that the correlation was not random was less than .05 (in most cases, it was less than .01) and b) in general, if the strength of the relationship was greater than .30. As a rule of thumb, relationships in the .300-.450 range were considered significant but weak, in the .451-.600 range, strong; and over .600 to be very strong.

2. Isolated correlations, even if significant by the above criteria were not used to draw conclusions. Due to the number of dependent variables used, relationships were only significant if a pattern could be found amongst the various variables. For example, a relationship found for level of out-of-county

holdings, out-of-state and the two combined would be given more credence than one of these alone.

3. Correlations were only used when they corroborated case study data. The dangers of finding significant relationships yet assigning to them arbitrary meanings are recognized. However, in this study, one should recognize that the correlations of aggregate data are an integral part of a broader research process. The correlations chosen to be used for this report grew out of or supported hypotheses and expectations found in the case studies and in other literature on the impacts of land ownership.

With these criteria for selectivity and significance, care is still taken to qualify certain findings. In general, these qualifications grow from limitations of the data sources (e.g. old census data), or from the inability to explain certain relationships adequately. Despite the qualifiers supplied throughout the report, we believe that the numerous correlations used are indeed significant in their own right, and especially in consideration of the limited knowledge in this field.

Writing and Production of the Report

As had been attempted throughout the research process, area citizens and members of the research team were consulted on the final organization of the land ownership report. The structure of this report in turn influenced the allocation of responsibilities for completing its various parts as well as the stages through which the writing process moved. A workshop of research participants and other area citizens met in January 1980 to determine the organization of the final report. The decision was to divide the report into seven volumes: one being a comprehensive regional report and the other six being state reports, one for each state in the study area. The regional report was to include an overview analysis of land ownership and taxation in the region as well as discussion of the major impact areas. The state reports were to include three major components: a summary state report documenting land ownership, use and taxation patterns in the state and analyzing their impacts in the state and localities in the state; case studies of selected counties; and county profiles documenting ownership and taxation patterns for each survey county in the state.

The process by which case studies were produced has already been discussed in some detail. As with the case studies, other segments of the report combined primary and shared responsibilities with verification and review by other members of the research team and task force members. County Profiles for the 80 counties were compiled at the regional level, using computer printouts that summarized the ownership and taxation characteristics of the counties. Once initial drafts were completed they were sent to the state coordinators for verification. Questions, corrections and suggestions were then returned to the regional staff where final drafts of the county profiles were constructed.

Writing the state report was the primary responsibility of the state coordinators, working in cooperation with their respective task forces, other state coordinators and the regional staff. The six state coordinators met several times with the regional staff to facilitate this process. Once initial drafts of the state reports were completed, they were forwarded to the regional staff for editorial comment, verification and suggestions at the same time that they were being reviewed by people on the state level. After extensive review at the regional level, the reports were returned to the state coordinators for revision into a second draft. Once this was done, the report once again went to the regional staff for final editing, verification and combining with the case studies and county profiles into a state volume. Copies of all state reports were then forwarded to all state coordinators for comment and suggestions.

The regional report was the responsibility of the regional staff, working in cooperation with the Appalachian Land Ownership Task Force and the state coordinators. Many of the initial steps in this process have already been discussed (e.g. coordination, development of methods of analysis, etc.). After months of accumulating and verifying data, the regional staff was able to utilize information from the state reports, case studies, land ownership survey data, and other aggregate data to develop a thorough overview and analysis at the regional level. Each section of the regional report went through several drafts within the regional staff. Once preliminary drafts of the various sections of the report were completed, they were forwarded to the state coordinators for comment and suggestions prior to writing a final draft.

Methodology of the Land Study

Footnotes

1. Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm. Herrin, Illinois; Illinois South Project, Inc., 1978, p. 3.

2. Ibid, p. 4.

3. Ibid, p. 5.

4. Nancy R. Bain, "The Impact of Absentee Land Ownership in a Rural Area: A Case Study in Southeast Ohio," unpublished paper. Department of Geography, Ohio University, Athens, Ohio.

5. Ralph W. Kline. The Extent and Characteristics of Absentee Land Ownership Within a Five County Region of Southeastern Ohio. Unpublished Master's Thesis, Ohio University, December 1977, p. 28.

6. Jess C. Gilbert and Craig K. Harris, "Corporate Land Ownership and Rural Poverty: A Center-Periphery Model Applied to the Upper Peninsula of Michigan," Preliminary Draft of a paper presented at the annual meeting of the Rural Sociological Society, San Francisco, California, September 1-3, 1978, pp. 20-21

7. Ibid, p. 21.

8. Joey Childers, "Harlan County Land Ownership," unpublished paper, Lexington, Kentucky, University of Kentucky Appalachian Center, 1978. See also Richard Kirby, Kentucky Coal: Owners, Taxes, Profits. Prestonsburg, Kentucky: Appalachian Volunteers, 1969.

9. William Cary, Molly Johnson, Meredith Golden and Trip Van Noppen, The Impact of Recreational Development. Durham, N.C.: North Carolina Public Interest Research Group, April 1975, p. 5.

10. Ibid.

11. See John Gaventa, Ellen Ormond, Bob Thompson, "Coal, Taxation and Tennessee Royalists," (Xerox for Vanderbilt University Student Health Coalition, August 1971).

12. Carol Schommer, "A Critique of Virginia's Mineral Taxation Program," prepared for Virginia Citizens for Better Reclamation, 1978.

13. J. Davitt McAteer, Coal Mine Health and Safety: The Case of West Virginia. New York: Praeger Publishers, 1973, pp. 140-80.

14. Tom Miller, "Who Owns West Virginia?" reprints from the Huntington Advertiser and Herald Dispatch (1974).

15. A list of these 80 survey counties may be found in Attachment A.

Methodology of the Land Study

Footnotes

Page # 2

16. See Attachment A for notation of the 19 case study counties.

17. Information on nature of ownership and other coding categories was obtained primarily from the 1978 Land (Tax) Books in each county. In certain counties in Tennessee and in Tuscaloosa County, Alabama, the 1979 tax rolls were used.

18. Bain, Kline, op. cit.

19. Walter Goldschmidt, As You Sow: Three Studies in the Social Consequences of Agribusiness. (Glencoe, Illinois: Free Press, 1947; Montclair, New Jersey: Allanheld, Osmun and Company, 1978).

ATTACHMENT C

CODING INSTRUCTIONS

LAND OWNERSHIP STUDY

1. State I. D.--Col. 1

Each state will be assigned a number. Doing this alphabetically, states have been assigned the following numbers:

Alabama-1
Kentucky-2
North Carolina-3
Tennessee-4
Virginia-5
West Virginia-6

In column 1 enter the number corresponding to the state in which the information is being collected.

2. County I. D.---Col. 2-3

Each county will be assigned a number by the State Coordinator. In columns 2-3 enter the number of the county, 01-X. In most states, the numbers will be from 01-12 except in those states where more than twelve counties are included in the survey.

3. District I. D.---------------------------------------Col. 4

In this column enter the number of the county tax district in which the property is located. If these districts aren't numbered, assign numbers to them alphabetically and so note in your field notes.

4. Nature of Land Ownership-----------------------------Col. 5

Ownership of the land will be divided into four categories: individual, corporate, public, or private non-profit. In column 4 enter one of the following numbers, depending upon the type of ownership that is indicated:

Individual-1
Corporate-2
Public-3
Private non-profit-4

Public ownership refers to either state, local or federal ownership. Private non-profit refers to church, college or other such groups.

5. Residence of Owner-----------------------------------Col. 6

The owner's residence will be divided into three categories: in-county, out-of-county/in-state, or out-of-state. In column 5 enter one of the following numbers, depending upon the residence of owner indicated:

In-county-1
Out-of-county/in-state-2
Out-of-state-3

6. Total Surface Acres--Col. 7-11

In these columns enter the actual total acres listed. List all owners over 250 acres. List non-resident, corporate and public over 20 acres.

7. Land Use Category--Col. 12-15

Use the following categories and code accordingly: (Enter prima categories in column 15; secondary use in column 14, etc.)

Commercial/Industrial-1
Agriculture plain (e.g., pasture)-2
Agriculture prime (e.g., crop, cultivated)-3
Woodland/Forest-4
Residential-5
Recreational (e.g., park, wilderness area)-6
Minerals Under-Development-7
 (in the process of being mined)
Minerals Not Under-Development-8

Enter the numbers from right to left. If more than one category applies to a given piece of property, enter the code number for each use category. If none of these categories apply, leave the columns blank.

8. Total Mineral Acres--Col. 16-20

List actual acres designated as mineral (including gas and oil). If there is no such designation in your state, leave these columns blank.

9. Mineral Type---Col. 21

Enter in this column the appropriate code number corresponding to the following mineral types:

Coal-1
Gas & Oil-2
Other-3
Combination-4

If you detect a concentration of a particular other mineral (e.g. zinc, lead) in a county, please note this in your field notes. If there is no mineral acreage listed, leave this column blank.

10. Appraised Land Value--Col. 22-28

In these columns, enter the appraised land value as recorded in your sources. If the appraised value is not available, enter the assessed value, but be sure to include in your field notes the assessment ratio used in the county. Follow this same procedure in listing building and mineral values.

ATTACHMENT A

APPALACHIAN LAND OWNERSHIP STUDY/SURVEY COUNTIES

I. Alabama

Blount
Cherokee
Cleburne
Cullman
Dekalb*
Etowah
Fayette
Jackson
Lamar
Marion
MArshall
Shelby*
Tuscaloosa
Walker*
Winston

II. Kentucky

Bell
Breathitt
Floyd
Harlan*
Johnson
Knott
Knox
Laurel
Letcher
Martin*
Perry
Pike *

III. North Carolina

Alleghany
Ashe
Avery
Burke
Clay
Haywood
Henderson*
Jackson
Madison
Mitchell
Swain*
Watauga*

IV. Tennessee

Anderson
Bledsoe
Campbell*
Cumberland*
Fentress
Hamilton
Marion
Morgan
Rhea
Roane
Scott
Sequatchie
Van Buren
White

V. Virginia

Bland
Buchanan
Dickenson
Grayson*
Lee
Russell
Scott*
Smyth
Tazewell
Washington
Wise*
Wythe*

VI. West Virginia

Braxton
Jefferson
Kanawha
Lincoln*
Logan*
McDowell
Marion
Marshall
Mineral
Mingo*
Ohio
Raleigh
Randolph*
Summers
Wayne

*Case Study Counties

ATTACHMENT B

State I.D.	County I.	District I.	Nature	Residence	Total Surface Acres	Land Use	Total Mineral Acres	Mineral Ty	Land Value	Building Value	Mineral Value	Tax Paid	Name of Owner	Address of Owner	Zip
1	2 3	4	5	6	7 8 9 10 11	12 13 14 15	16 17 18 19 20	21	22 23 24 25 26 27 28	29 30 31 32 33 34 35	36 37 38 39 40 41 42	43 44 45 46 47	48 49 50 51 52 53 54 55 56 57 58 59 60 61	62 63 64 65 66 67 68 69 70 71 72 73 74 75	76 77 78 79 80
1	2 3	4	5	6	7 8 9 10 11	12 13 14 15	16 17 18 19 20	21	22 23 24 25 26 27 28	29 30 31 32 33 34 35	36 37 38 39 40 41 42	43 44 45 46 47	48 49 50 51 52 53 54 55 56 57 58 59 60 61	62 63 64 65 66 67 68 69 70 71 72 73 74 75	76 77 78 79 80

11. Appraised Building Value---------------------------------Col. 29-35

Note the actual appraised value of any buildings on the land. If no buildings are listed, then leave these columns blank. Do not include equipment and personal property.

12. Appraised Mineral Value---------------------------------Col. 36-42

Enter the actual appraised value of any minerals (including gas and oil). If no minerals are listed, leave these columns blank.

13. Actual Tax Paid---Col. 43-47

In these columns, enter the total taxes paid on the land, buildings, and minerals. Do not list equipment or personal property. If no taxes were paid or if no taxes are recorded, leave these columns blank.

14. Name of Owner---Col. 48-61

In these columns, enter as precisely and as briefly as possible the name of the land's owner.

15. Address of the Owner------------------------------------Col. 62-75

As briefly and precisely as possible, enter the town and state in which the owner resides.

16. Zip Code of the Owner-----------------------------------Col. 76-80

Enter in these columns the zip code of the owner.

APPENDIX II

A SELECTIVE, ANNOTATED BIBLIOGRAPHY ON LAND OWNERSHIP AND PROPERTY TAXATION, WITH AN EMPHASIS ON APPALACHIA

by

Steve Fisher
Revised July 1980

Special thanks to Louise Fachilla, John Gaventa, Virginia Groseclose, Mary Harnish, and the Highlander Center for help in preparing this bibliography. A preliminary and selectively annotated version of this bibliography was published in May 1979.

Abbreviations used in this bibliography:

AER - Agricultural Economic Report
AIB - Agriculture Information Bulletin
ARC - Appalachian Regional Commission
ERS - Economic Research Service (of the USDA)
ESCS - Economics, Statistics and Cooperatives Service (of the USDA)
F - Steve Fisher, ed. *A Landless People in a Rural Region: A Reader on Land Ownership and Property Taxation in Appalachia*. New Market, TN: Highlander Center, 1979.
IAAO - International Association of Assessing Officers
JHP - Johns Hopkins Press
LJ&A - Helen Lewis, Linda Johnson, and Don Askins, eds. *Colonialism in Modern America: The Appalachian Case*. Boone, NC: Appalachian Consortium Press, 1978.
MLW - *Mountain Life and Work*
MP - Miscellaneous Publication
RFF - Resources for the Future
TRED - Committee on Taxation, Resources, and Economic Development
TVA - Tennessee Valley Authority
Univ. - University
USDA - United States Department of Agriculture
USFS - United States Forest Service
USGPO - United States Government Printing Office
VPI - Virginia Polytechnic Institute
WVU - West Virginia University

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I. GENERAL WORKS

A. History

This section provides only a sampling of the major works related to the historical development of land ownership patterns in the U.S. Several key works on the history of the conservation movement are included, but conservation and environmental texts are omitted. Regional and state histories unrelated to Appalachia are not listed.

Abernethy, Thomas P. *Western Lands and the American Revolution*. NY: Appleton-Century, 1937; reprint ed., NY: Russell & Russell, 1959. Political effects of the trans-Appalachian westward movement on the land policies of the British and U.S. governments.

Abrams, Charles. *Revolution in Land*. NY: Harper & Brothers, 1939. Interesting historical critique of land tenure in the U.S. as a battle between industry and agriculture. Concludes that industry won and calls for a program of land nationalization.

Carstensen, Vernon, ed. *The Public Lands: Studies in the History of the Public Domain*. Madison: Univ. of Wisconsin Press, 1963. Anthology of historical articles.

Chandler, Alfred N. *Land Title Origins: A Tale of Force and Fraud*. NY: Robert Schalkenbach Foundation, 1945. State-by-state account of how "unscrupulous men of great political power and influence" initially gained control of the public domain.

Clawson, Marion. *The Bureau of Land Management*. NY: Praeger, 1971. Historical treatment of the major resource bureau in the Dept. of Interior.

Dick, Everett. *The Lure of the Land: A Social History of the Public Lands from the Articles of Confederation to the New Deal*. Lincoln: Univ. of Nebraska Press, 1970. Examines the human side of the federal process of land distribution.

Ellis, David M., ed. *The Frontier in American Development: Essays in Honor of Paul Wallace Gates*. Ithaca: Cornell Univ. Press, 1969. Essays on the history of public lands and land disposal.

Gates, Paul W. *History of Public Land Law Development*. Written for the Public Land Law Review Commission. Wash. DC: USGPO, 1968. Examines the historical development of present and past public land laws.

————. "Research in the History of American Land Tenure: A Review Article." *Agricultural History* 28 (July 1954), 121-26. Informative review of key historical works.

————, ed. *Public Land Policies: Management and Disposal*. NY: Arno, 1979. Focuses attention on the major problems of land administration throughout U.S. history.

Harris, Marshall. *Origin of the Land Tenure System in the United States*. Ames: Iowa State College Press, 1953. Focuses on the tenure process during the two centuries of the Colonial era.

Hays, Samuel P. *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920*. Harvard Historical Monograph No. 40. Cambridge: Harvard Univ. Press, 1959. Standard work which argues that conservation did not develop as a mass movement but as a scientific movement led by specialists loyal to professional ideals.

Hibbard, Benjamin H. *A History of the Public Land Policies*. NY: Macmillan, 1924; reprint ed., Madison: Univ. of Wisconsin Press, 1965. Reference work sketching the historical development and disposition of the public domain.

Ise, John. Our National Park Policy: A Critical History. Pub. for RFF. Baltimore: JHP, 1961; reprint ed., NY: Arno Press, 1979. Contains history of each park and of each National Park Service administration since 1916.

Josephson, Matthew. The Robber Barrons: The Great American Capitalists, 1861-1901. NY: Harcourt, Brace & Co., 1934. Includes portraits of "barons" who made their fortunes through land control and speculation.

Livermore, Shaw. Early American Land Companies: Their Influence on Corporate Development. NY: Commonwealth Fund, 1939. Focus on pre- and post-revolutionary land companies and their activities.

Moyer, D. David; Harris, Marshall; & Harmon, Marie B. Land Tenure in the United States: Development and Status. AIB-338. Wash. DC: ERS, USDA, June 1969. Examines historical origins and trends in land ownership and control.

Nixon, Edgar B., ed. Franklin D. Roosevelt and Conservation, 1911-1945. 2 vols. Hyde Park, NY: General Services Administration, 1957; reprint ed., NY: Arno Press, 1972. Indexed, annotated collection of the most important presidential correspondence concerning conservation. Valuable source of conservation history during the New Deal.

Peffer, E. Louise. The Closing of the Public Domain: Disposal and Reservation Policies, 1900-50. Stanford: Stanford Univ. Press, 1951. Relates steps by which the concept of public domain has veered from one of land held in escrow pending transfer of title toward one of reservations held in perpetuity in the interest of the collective owners, the people of the U.S.

Penick, James L., Jr. Progressive Politics and Conservation: The Ballinger-Pinchot Affair. Chicago: Univ. of Chicago Press, 1968. Explores 1910 political controversy which split the conservation movement.

Petulla, Joseph M. American Environmental History: The Exploitation and Conservation of Natural Resources. San Francisco: Boyd & Fraser Pub. Co., 1977. History of anti-conservationist policy and practice, and a study of the development of a political economy whose chief imperative is growth.

Puter, S. A. D. in collaboration with Horace Stevens. Looters of the Public Domain, Embracing a Complete Exposure of the Fraudulent Systems of Acquiring Titles to the Public Lands of the United States. Portland, OR, 1908; reprint ed., NY: Arno, 1972. Discloses the techniques used by individuals to defraud the government of public lands.

Richardson, Elmo R. Dams, Parks & Politics: Resource Development and Preservation in the Truman-Eisenhower Era. Lexington: Univ. Press of Kentucky, 1973. Analysis of the conservation issues of the 1950s.

________. The Politics of Conservation: Crusades and Controversies, 1897-1913. Univ. of California Publications in History, Vol. 70. Berkeley: Univ. of California Press, 1962. On the conservation movement and its role in Western and national politics, culminating in the Ballinger-Pinchot controversy.

Robbins, Roy M. Our Landed Heritage: The Public Domain, 1776-1936. Princeton: Princeton Univ. Press, 1942; reprint ed., Lincoln: Univ. of Nebraska Press, 1962. Standard history of federal land policy.

Rohrbough, Malcolm J. The Land Office Business: The Settlement and Administration of American Public Lands, 1789-1837. NY: Oxford Univ. Press, 1968. General history of federal land policy and its administration by the General Land Office.

Sakolski, Aaron M. The Great American Land Bubble: The Amazing Story of Land-Grabbing, Speculations and Booms from Colonial Days to the Present Time. NY: Harper & Brothers, 1932. Readable account of how national land ownership patterns developed.

________. Land Tenure and Land Taxation in America. NY: Robert Schalkenbach Foundation, 1957. Traces the evolution of our present land tenure system and evaluates the probable effect of various land taxation proposals upon land use and social development.

Smith, Frank E. The Politics of Conservation. NY: Pantheon, 1966. Readable history of the conservation movement.

Smith, Frank E.; Foss, Phillip O.; Doherty, William T., Jr.; & Divorsky, Leonard B., eds. Conservation in the United States: A Documentary History. 5 vols. Chelsea House, 1971. Excerpts of legislation, reports and speeches related to conservation issues.

Swain, Donald C. Federal Conservation Policy, 1921-1933. Univ. of California Publications in History, Vol. 76. Berkeley: Univ. of California Press, 1963. Sets the stage for the study of conservation policy during the New Deal years. A thorough study which covers national forests, national parks, reclamation, minerals, and water power.

Treat, Payson Jackson. The National Land System, 1785-1820. NY: E. B. Treat Co., 1910; reprint ed., NY: Russell & Russell, 1967. Detailed analysis of the origins of the land system and the 20-year credit period in the sale of the public domain.

Warne, William E. The Bureau of Reclamation. NY: Praeger, 1973. History of this agency and its projects.

Watkins, T. H. & Watson, Charles S., Jr. The Land No One Knows: America and the Public Domain. San Francisco: Sierra Club Books, 1975. Traces the progressive loss of our common land inheritance to private landholders.

B. Land Ownership

This section identifies the more significant texts, collections of readings, general surveys, and bibliographies concerned with land ownership in Appalachia and the U.S. Several works focusing on special topics related to land ownership are also included. Works focusing on black and foreign ownership patterns are listed in Part IV-A. No effort is made to list works concerned primarily with conservation, natural resources or land use issues.

Andrews, Richard N. L., ed. Land in America: Commodity or Natural Resource? Lexington,MA: Lexington Books, 1979. Essays on the history of land in the U.S., people's perceptions and images of land, ownership,and government and the land. Includes a useful bibliography (219-39).

Barlowe, Raleigh. Land Resource Economics: The Economics of Real Estate. 3rd ed. Englewood Cliffs, NJ: Prentice Hall, 1978. A leading textbook in the field.

Barnes, Peter, ed. The People's Land: A Reader on Land Reform in the United States. Emmaus, PA: Rodale Press, 1975. Excellent collection of articles, studies and statements dealing with the issues of land ownership and land use.

Barnes, Peter & Casalino, Larry. Who Owns the Land? A Primer on Land Reform in the USA. Berkeley, CA: Center for Rural Studies, 1972. Summarizes key land issues and suggests appropriate remedies.

Behrens, John O.; Moyer, D. David; & Wunderlich, Gene. Land Title Recording in the United States: A Statistical Summary. State & Local Government Special Studies No. 67. Wash. DC: USDA & U.S. Dept of Commerce, March 1974. Survey of real estate transfer procedures.

Bertrand, Alvin L. & Corty, Floyd L., eds. Rural Land Tenure in the United States: A Socio-Economic Approach to Problems, Programs, and Trends. Baton Rouge: Louisiana State Univ. Press, 1962. Uses an interdisciplinary approach to present the current research knowledge in the field of land tenure.

Bingham, Edgar. "Appalachia: Underdeveloped, Overdeveloped, or Wrongly Developed?" The Virginia Geographer 7 (Fall-Winter 1972), 9-12. Examines the major exploiters of the land in Appalachia.

Bosselman, Fred; Callies, David; & Banta, John. The Taking Issue: A Study of the Constitutional Limits of Governmental Authority to Regulate the Use of Privately-Owned Land Without Paying Compensation to the Owners. Wash. DC: Council on Environmental Quality, 1973. Examines the political and legal history of our Constitutional powers affecting land.

Boxley, Robert F. Landownership Issues in Rural America, ERS-655. Wash. DC: ERS, USDA, April 1977. Broad overview of key issues.

Branscome, Jim. "If Appalachia is to Survive, Land Reform is a Must." Mountain Eagle (January 4, 1973). Also in MLW (May 1973), 11-14; Peoples Appalachia 3 (Spring 1973), 32-33; and F, 24-25. Identifies the major land issues in Appalachia and discusses several reform proposals.

Browning, Frank. The Vanishing Land: The Corporate Theft of America. NY: Harper Colophon Books, 1975. Shows how each year more and more land is given over to giant banks, manufacturers and insurance companies.

Burke, Barlowe, Jr. & Wunderlich, Gene, eds. Secrecy and Disclosure of Wealth in Land. Wash. DC: Farm Foundation in cooperation with USDA, 1978. Examines some of the major ethical, legal and economic issues of securing information about who owns the land.

Carruth, Eleanore. "Look Who's Rushing into Real Estate." Fortune (October 1968), 160-63+ Discusses how ITT, Westinghouse and other giant corporations are investing in land.

Center for Rural Affairs. Land Tenure Research Guide. Walthill, NB, n.d. Learning guide to help people ask the right questions of public employees who manage the offices where information on land tenure is kept.

Chasen, Daniel Jack. Up For Grabs: Inquiries into Who Wants What. Seattle: Madrona Pubs, 1977. Examines some of the effects of the private ownership of land and water.

Clark, Mike. "How Can You Buy or Sell the Sky?" Mountain Eagle (June 23, 1977). Also Highlander Reports Pamphlet Series No. 7. Discusses the importance of land to Appalachia's future.

Clawson, Marion. America's Land and Its Uses. Pub. for RFF. Baltimore: JHP, 1972. Survey of major facts and issues related to land and land policy.

Clawson, Marion; Held, R. Burnell; & Stoddard, Charles H. Land for the Future. Pub. for RFF. Baltimore: JHP, 1960. Considers the changing uses of land in the U.S., historically, at present, and in light of expectations extending to the year 2000.

"The Corporate Land Rush of 1970." Business Week (August 29, 1970), 72-77. Describes how more and more big companies are moving into real estate development.

Denman, D. R.; Switzer, J. F. Q.; & Sawyer, O. H. M. Bibliography of Rural Land Economy and Land Ownership, 1900-1957: A Full List of Works Relating to the British Isles and Selected Works, from the United States and Western Europe. Cambridge: Dept. of Estate Management, Cambridge Univ., 1958. A useful bibliography.

Ely, Richard T. and Wehrwein, George S. Land Economics. NY: Macmillan, 1940; reprint ed., Madison: Univ. of Wisconsin Press, 1964. One of the most influential books in the history of land economics.

Fellmeth, Robert C. Politics of Land: Ralph Nader's Study Group Report on Land Use in California. NY: Grossman, 1973. Found that 25 landowners hold more than 61% of CA's private land.

Finger, Bill; Fowler, Cary; & Hughes, Chip. "Special Report on Food, Fuel, and Fiber." Southern Exposure 2 (Fall 1974), 145-210. Valuable statistical summaries.

Fisher, Steve. "Appalachians as 'Redskins': The Assault on the Land Continues." Mountain Review 4 (April 1979), 4-6. Examines the extent and significance of the assault on the land in Appalachia.

________, ed. A Landless People in a Rural Region: A Reader on Land Ownership and Property Taxation in Appalachia. New Market, TN: Highlander Center, 1979. Includes excerpts from existing land ownership studies along with articles which examine the impact of land ownership patterns on the quality of life in Appalachia.

Frey, H. Thomas. Major Uses of Land in the United States: 1974. AER-440. Wash. DC: ESCS, USDA, November 1979. Summary account of the extent and distribution of land used for crops, pasture and range, forestry, and various special-purpose uses.

Friedenberg, Daniel M. "America's Land Boom: 1968." Harper's (May 1968), 25-32. Discusses how preferential tax treatment for speculators continues to create serious imbalances in land development.

Fugere, Joseph. "Corporate Invasion in Land Ownership." A Working Paper. Wash. DC: Rural America, 1977. Broad overview of major corporate landowners.

Gilbert, Jess C. & Harris, Craig K. "Corporate Land Ownership and Rural Poverty: A Center-Periphery Model Applied to the Upper Peninsula of Michigan." Unpublished paper presented at the annual meeting of the Rural Sociological Society, San Francisco, September 1-3, 1978. Examines the relationship between land ownership and rural poverty from the perspective of a model of uneven spatial development.

Johnson, V. Webster & Barlowe, Raleigh. Land Problems and Policies. NY: McGraw-Hill, 1954. Text concerned primarily with land problems and policies rather than with the theoretical framework of land economics. Includes a useful historical perspective of American land policies and sections on agricultural requirements, land tenure and land reform.

Jones, Lindsay, ed. Citizen Participation in Rural Land Use Planning in the Tennessee Valley. Nashville, TN: Agricultural Marketing Project, 1979. Good collection of essays that considers the problems Appalachians have in attaining access to the land planning process.

"Land." Community Economics. An Occasional Bulletin of the Center for Community Economic Development. Cambridge, MA, May 1972. Special issue on land ownership and abuse.

"Last Stand to Save the Land." Peoples Appalachia 2 (September-October 1971). Dated but important survey of Appalachian land issues.

Lewis, Douglas G. Corporate Landholdings: An Inquiry into a Data Source. ESCS Staff Report NRED 80-5. Wash. DC: ESCS, USDA, March 1980. Examines Securities and Exchange Commission reporting requirements for publicly traded corporations, aggregates the available data, assesses the data source, and suggests means to improve the data.

Lewis, James A. Landownership in the United States, 1978. AIB-435. Wash. DC: ESCS, USDA, April 1980. The data portray a broad picture of landownership characteristics at the national level and show some comparisons of landownership among regions.

Meyer, Peter. "Land Rush: A Survey of America's Land." Harper's (January 1979), 45-60. Also in F, 4-19. Informative and up-to-date survey of who owns and controls the land.

Moyer, D. David. Land Information Systems: An Annotated Bibliography. Wash. DC: ESCS, USDA, 1978. Extensive and useful bibliography.

Moyer, D. David & Daugherty, Arthur B. Landownership in the Northeast United States: A Sourcebook. Wash. DC: ERS, USDA, 1976. Reviews and evaluates the 3 major sources of land ownership data for 13 Northeast states.

"The New American Land Rush." Time (October 1, 1973), 80+. Examines the dimensions, cause and consequences of the "new land rush" and focuses on some of the powerful individual who determine how the U.S. uses the land.

Osborn, William C. Paper Plantation: Ralph Nader's Study Group Report on the Pulp and Paper Industry in Maine. NY: Grossman, 1974. Reports that 7 absentee corporation own 32% of Maine's 20 million acres.

Ottoson, Howard W., ed. Land Use Policy and Problems in the United States. Lincoln: Univ. of Nebraska Press, 1963. Reviews the course of U.S. land policy.

"Our Promised Land." Southern Exposure 2 (Fall 1974). Excellent collection of essays on land issues in the South and Appalachia.

The Plow (November 1976). Special issue on land.

"Save the Land and People." MLW (May 1973). Provides a survey of groups working on land issues.

"The Shrinking Supply of Private Land." U.S. News & World Report (February 20, 1978), 64-65. Discusses how state and local governments are buying up land at the rate of a million acres a year.

Smith, Charles L. A Bibliography on Land Reform in Rural America. San Francisco: Center for Rural Studies, 1974. Over 1,000 references.

Stone, Christopher D. Should Trees Have Standing? Toward Legal Rights for Natural Object Los Altos, CA: William Kaufmann, 1974. Attempt to secure our psychological grip on our relationship to the land by widening the legal concept of possessors of rights to include the land.

Timmons, John F. & Murray, William G., eds. Land Problems and Policies. Ames: Iowa State College Press, 1950; reprint ed., NY: Arno Press, 1972. Sixteen essays concerned with land problems and uses.

U.S. Congress. Senate. Subcommittee on Migratory Labor of the Committee on Labor and Public Welfare. Farmworkers in Rural America, 1971-1972. Part 2: Who Owns the Land? Hearings, 92nd Congress, 1st and 2nd sessions. Wash. DC: USGPO, 1972. Useful collection of statements and position papers on who owns the land.

USDA, ERS. Our Land and Water Resources: Current and Prospective Supplies and Uses. MP-1290. Wash. DC: USGPO, May 1974. U.S. land and water resources are analyzed as a basis for projecting agricultural cropland and other land needs to the year 2000. Based on 1969 Census data. Includes a useful section on ownership and land use (20-32).

Wunderlich, Gene. Facts About U.S. Land Ownership. AIB-422. Wash. DC: ESCS, USDA, November 1978. Summarizes ownership issues and statistics. Discusses obstacles to getting details about land ownership.

oung, John A. & Newton, Jan M. Capitalism and Human Obsolescence: Corporate Control versus Individual Survival in Rural America. Montclair, NJ: Allanheld, Osmun, 1980. Has a west coast focus, but includes good chapters on the timber industry, the mining industry and "the farm problem."

C. Property Taxation

Works concerned specifically with property tax issues related to agricultural and forest lands are included in Parts IV and V.

Aaron, Henry J. Who Pays the Property Tax: A New View. Wash. DC: Brookings Institution, 1975. Useful overview of arguments for and against the property tax. Offers reform suggestions.

dvisory Committee on Intergovernmental Relations. The Property Tax in a Changing Environment: Selected State Studies--An Information Report. M-83. Wash. DC: March 1974. Summarizes selected state property tax studies.

Becker, Arthur P., ed. Land and Building Taxes: Their Effect on Economic Development. Proceedings of a Symposium Sponsored by TRED at the Univ. of Wisconsin, Milwaukee, 1966. Madison: Univ. of Wisconsin Press, 1969. Five case studies.

Bernard, Michael M. Constitutions, Taxation, and Land Policy. Lexington, MA: Lexington Books, 1979. Examines the key provisions in all state constitutions and the U.S. Constitution that pertain to the limits of taxation on land.

Brandon, Robert M.; Rowe, Jonathan; & Stanton, Thomas H. Tax Politics: How They Make You Pay and What You Can Do About It. NY: Pantheon, 1976. Excellent and easy-to-read coverage of the various dimensions of property taxation, along with a chapter on investigating property taxes. Includes a useful bibliographical essay.

Colby, Donald S. & Brooks, David B. Mineral Resource Valuation for Public Policy. Wash. DC: U.S. Dept. of Interior, Bureau of Mines, 1969. Manual for making the type of mineral resource valuation commonly required for such public policy problems as mineral leasing.

Gaffney, Mason, ed. Extractive Resources and Taxation. Proceedings of a Symposium Sponsored by TRED at the Univ. of Wisconsin, Milwaukee, 1964. Madison: Univ. of Wisconsin, 1967. Three major sections--theoretical foundations, economic institutions, and policy.

Greever, Barry. Property Taxes: What to Look For and Where to Find It. Mineral Bluff, GA: Cut Cane Assn., 1973. Useful guide to researching property taxes.

Holland, Daniel M., ed. The Assessment of Land Value. Proceedings of a Symposium Sponsored by TRED at the Univ. of Wisconsin, Milwaukee, 1969. Madison: Univ. of Wisconsin Press, 1970. Ten essays focusing on issues of site value taxation and the problems of assessing land.

IAAO, ed. Analyzing Assessment Equity. Proceedings of a Symposium Conducted by the IAA Research and Technical Services Department in Cooperation with the Lincoln Institute of Land Policy. Chicago, 1977. Techniques for measuring and improving the quality of property tax administration.

Jensen, Jens P. Property Taxation in the United States. Chicago: Univ. of Chicago Press, 1931. A classic work which includes a history of property taxation.

Keene, John. Untaxing Open Space. Prepared for the Council on Environmental Quality. Wash. DC: USGPO, 1976. Includes a very useful bibliography on property taxation.

Keith, John. Property Tax Assessment Practices: A Reference Book for the Assessor, Appraisor, Accountant, Attorney and the Student. Monterey Park, CA: Highland Pub., 1966. Closest thing to an assessor's desk manual.

Lindholm, Richard W. "Twenty-One Land Value Taxation Questions and Answers." American Journal of Economics and Sociology 31 (April 1972), 153-61. Provides a helpful explanation of site value taxation.

________, ed. Property Taxation, USA. Proceedings of a Symposium Sponsored by TRED at the Univ. of Wisconsin, Milwaukee, 1965. Madison: Univ. of Wisconsin Press, 1967. Focus on business and industry and on special problems.

Lynn, Arthur D., Jr., ed. The Property Tax and Its Administration. Proceedings of a Symposium Sponsored by TRED at the Univ. of Wisconsin, Milwaukee, 1967. Madison: Univ. of Wisconsin Press, 1969. Focus on administrative organization assessment procedures and reforms.

________, ed. Property Taxation, Land Use, and Public Policy. Proceedings of a Symposium Sponsored by TRED at the Univ. of Wisconsin, Madison, 1973. Madison: Univ. of Wisconsin Press, 1976. Provides a current appraisal of, and offers alternatives to, th property tax.

Netzer, Dick. The Economics of the Property Tax. Wash. DC: Brookings Institution, 196 Major work on the subject, but should be read critically.

Paul, Diane B. The Politics of the Property Tax. Lexington, MA: Lexington Books, 1975. Urban focus.

Pechman, Joseph and Okner, Benjamin. Who Bears the Tax Burden? Wash. DC: Brookings Institution, 1974. Raises a good question but is flawed by the use of existing assessments as the data base.

People Before Property: A Real Estate Primer and Research Guide. Cambridge, MA: Urban Planning Aid, 1972. Guide for doing research on individuals and businesses concerned with property.

Peterson, George E., ed. Property Tax Reform. Wash. DC: Urban Institute, 1973. Useful summary of the key issues.

Tax Institute of America. The Property Tax: Problems and Potentials. Symposium Conducted by the Tax Institute of America, November 1966. Princeton, NJ, 1967. Dated but useful summary of the key actors and issues.

USDA, ERS. Alternative Sources of Local Tax Revenue in Appalachia. Wash. DC, 1974. Concludes that the alternatives would not greatly change the present situation in Appalachia.

II. COAL LAND OWNERSHIP AND COAL PROPERTY TAXATION

A. Appalachian Regional and State Studies

There is no comprehensive survey of land ownership or property tax patterns in Appalachia. Many of the studies which exist are unpublished and are not in general circulation. Most of the works listed in this section can be found in the library collection of the Highlander Research and Education Center.

Akintola, Jacob; Colyer, Dale; & Weber, Wayne. Rural Land Use in the Monongahela River Basin. Bulletin 641. Morgantown: WVU Agricultural Experiment Station, 1975. Study of 10-county area in WV for trends in land and mineral rights ownership, agricultural production and limits to expansion.

Barkus, Gary. "The West Virginia Tax Structure, the People and Coal: An Analysis for the Layman." ARDF Public Interest Report No. 8. Charleston, WV: Appalachian Research & Defense Fund, 1971. Concludes WV's property tax system is one of the most regressive in the nation.

Blizzard, William. "West Virginia Wonderland." Appalachian South 1 (Spring & Summer 1966), 8-15. Also in MLW (November 1970), 5-11. Examines the relationship between corporate control and the tax structure in WV.

Childers, Joey. "Absentee Ownership of Harlan County." In F, 81-92. History of land acquisition in Harlan County and an assessment of the situation today.

"County Mirrors Appalachian Patterns: Inequities in the Tax System." Sandy New Era (February 1, 1979), 4-5. Also in F, 106-07. Information on the Mingo County, WV tax structure.

Fineman, Howard. "Owners of State's Coal Changing as Energy Firms Move In." Louisville Courier-Journal (December 18, 1977). Lists top 25 owners of coal acreage in KY.

Frazier, Jack. West Virginia Green. Part 1. Huntington, WV: Solar Age Press, 1976. Lists top 50 corporations in WV and their acreage.

Gaventa, John. "Property Taxation of Coal in Central Appalachia." Report for the Senate Subcommittee on Intergovernmental Relations from Save Our Cumberland Mountains, Inc. (SOCM), 1973. Published in F, 76-80. Surveys land ownership and coal taxation studies in KY, TN, VA, and WV.

Gaventa, John; Ormond, Ellen; & Thompson, Bob. "Coal, Taxation and Tennessee Royalists." Nashville, TN: Vanderbilt Student Health Coalition, 1971 (Unpublished). Survey of ownership and taxation in 5 TN coal counties exposing vast underassessment of coal reserves and corporate concentration in the coalfields.

Kirby, Richard M. "Kentucky Coal: Owners, Taxes, Profits. A Study in Representation Without Taxation." Prepared for the Appalachian Volunteers, 1969. See excerpt in Appalachian Lookout 1 (October 1969), 19-27. One of the first exposés of undertaxation of coal reserves in eastern KY.

Leistritz, Larry & Voelker, Stanley. "Coal Resource Ownership: Patterns, Problems and Suggested Solutions." Natural Resources Journal 15 (October 1975). Discusses ownership patterns and examines alternatives.

Lincoln Citizens for Tax Reform. "Who Owns Lincoln County?" Pamphlet. Griffithsville, WV, 1978. Also in F, 104-05. Citizen pamphlet on ownership and taxation and their effects on local services.

McAteer, J. Davitt. Coal Mine Health and Safety: The Case of West Virginia. NY: Praeger, 1973. One of the first studies of WV ownership. Provides figures for 14 major coal-producing counties.

McDonald, E. Dandridge & Kalis, Peter J. "Public Schools and Assessment of Mineral Reserves for Tax Purposes." ARDF Public Interest Report No. 10. Charleston, WV: Appalachian Research and Defense Fund, 1973. Discovers substantial under-assessment of mineral property in 4 WV counties.

McDowell County Committee for Fair Taxation. Who Owns McDowell County? Welch, WV, 1980. Citizen pamphlet on ownership and taxation and their effects on local services.

Miller, Tom D. Who Owns West Virginia? Huntington, WV: The Huntington Publishing Co., 1975. County-by-county summaries.

Millstone, James C. "East Kentucky Coal Makes Profits for Owners, Not Region." In Appalachia in the Sixties. Ed. by David Walls & John Stephenson. Lexington: Univ. Press of Kentucky, 1972. Examines how coal owners don't pay their fair share of taxes.

"Ownership vs. Stewardship of Land in Nine Counties of Southern West Virginia." Pamphlet Catholic Diocese of Wheeling, WV, n.d. Review of ownership and poverty patterns with theological and economic arguments about the impact of land concentration.

Privratsky, Bruce & Randolph, Jane. "Coal Taxes in Southwest Virginia." Unpublished report for the Senate Subcommittee on Intergovernmental Relations from the Concerned Citizens for Fair Taxes, 1973. Documents major inequities in the tax structure.

Ridgeway, James. The Last Play: The Struggle to Monopolize the World's Energy Resources. NY: Dutton, 1973. Includes a discussion of coal ownership in Appalachia and a profile of major energy companies.

Schommer, Carol. "A Critique of Virginia's Mineral Taxation Program." Unpublished study prepared for consideration by Virginia's Dept. of Taxation and the House of Delegate Finance Committee from Virginia Citizens for Better Reclamation (VCBR), 1978. Also in F, 95-103. Coal tax assessments and land ownership in 7 VA coal counties.

Scroggins, James & Tudor, Dean. "Report on Mineral Taxation in Tennessee." Unpublished report prepared for the Vanderbilt Student Health Coalition, 1973. Examines methods and results of mineral taxation in TN.

Shamsudin, Mohd. Noor Bin & Colyer, Dale. Mineral Rights and Property Taxation in West Virginia. R. M. No. 74. Morgantown: Agricultural and Forestry Experiment Station, WVU, July 1979. Examines the reappraisal program in WV and concludes that per acre taxes are still too low.

Walls, David S.; Billings, Dwight B.; Payne, Mary P.; & Childers, Joe F., Jr. "Coal Land and Mineral Ownership." Chapter 6 of A Baseline Assessment of Coal Industry Structu in the ORBES Region. Prepared for Ohio River Basin Energy Study Region (ORBES). Wash. DC: Office of Research and Development, U.S. Environmental Protection Agency, 1979. One of the most recent and comprehensive surveys of land ownership studies.

Wells, John C., Jr. "Poverty Amidst Riches: Why People Are Poor in Appalachia." Ph.D. dissertation, Rutgers Univ., 1977. See especially pp. 153-98. Excellent review of ownership studies throughout the region.

B. Impact Studies: The Social, Political, Economic, and Environmental Effects of Coal Land Ownership and Property Taxation Patterns in Appalachia.

Land ownership and taxation patterns affect every facet of life in Appalachia, yet there are few studies which address this question in a comprehensive manner. The studies listed below were selected to illustrate the various impact areas. No attempt is made to provide exhaustive coverage for any one area. Several studies which trace the evolution of coal land ownership patterns are included in this section.

Appalachian Research and Defense Fund. Coal Government of Appalachia. Charleston, WV, 1972. Documents the overwhelming political and economic influence of the coal industry in WV.

Arnett, Douglas O. "Eastern Kentucky: The Politics of Dependency and Underdevelopment." Ph.D. dissertation, Duke Univ., 1978. Examines the dependency which results from corporate control.

Balliet, Lee. "A Pleasing Tho' Dreadful Sight": Social and Economic Impacts of Coal Production in the Eastern Coalfields. Prepared for the Office of Technology Assessment, 1978. Case studies of 6 counties impacted by coal production. Identifies absentee corporate ownership as a principal cause of underdevelopment.

Barkan, Barry & Baldwin, Lloyd R. "Picking Poverty's Pocket." MLW (September 1970), 4-9, 19-21. Impact of absentee ownership in southwest VA.

Bethell, Thomas. The Hurricane Creek Massacre. NY: Perennial Library, 1972. Inquiry into a coal mine explosion that illustrates the influence of the coal industry on federal and state coal safety policy.

Bethell, Thomas & McAteer, J. Davitt. "The Pittston Mentality: Manslaughter on Buffalo Creek." Washington Monthly (May 1972), 19-28. Also in LJ&A, 259-75. Documents how the negligence and indifference of one of Appalachia's largest coal companies led to the Buffalo Creek disaster which killed over 100 local residents.

Caudill, Harry. My Land Is Dying. NY: Dutton, 1971. Documents the devastation of the Appalachian mountains by strip miners and corporate feudalism.

________. Night Comes to the Cumberlands: A Biography of a Depressed Area. Boston: Atlantic Monthly Press, 1962. The story of how the people of the eastern KY coalfields have suffered under absentee ownership.

Charles River Associates, Inc. The Economic Impact of Public Policy on the Appalachian Coal Industry and the Regional Economy. 3 vols. Prepared for the ARC. Wash. DC, 1973. Profiles the Appalachian coal industry and examines its impact on the region.

Coal Company Monitoring Project. ". . . in the mines, in the mines, in the Blue Diamond Mines. . .". Knoxville, 1979. Study of one coal company's impact on several KY and TN communities.

Dials, George & Moore, Elizabeth C. "The Cost of Coal: We Can Afford to Do Better." Appalachia 8 (October-November 1974), 1-29. Reprinted from Environment (September 1974). Examines the environmental and human costs of coal mining and shows that such costs need not occur.

Diehl, Richard. "Appalachia's Energy Elite: A Wing of Imperialism." *Peoples Appalachia* 1 (March 1970), 2-3. Comments on how the Energy Elite has come to dominate not only the Appalachian, but also the American, political and social system.

________. "How International Energy Elite Rules." *Peoples Appalachia* 1 (April-May 1970), 1, 7-12. Examines how the Energy Elite is organized and rules in Appalachia.

Dix, Keith. "Appalachia: Third World Pillage." *Peoples Appalachia* 1 (August-September 1970), 9-13. Compares the absentee exploitation of Appalachia with that in Third World, nonsocialist, underdeveloped countries.

________. "The West Virginia Economy: Notes for a Radical Base Study." *Peoples Appalachia* 1 (April-May 1970), 3-7. Brief historical survey of WV's role as a resource supplier to the rest of the nation, and an analysis of the changing structure of WV's economy in the post World War II period.

Drake, Richard. "Documents Relating to the Broad Form Deed." *Appalachian Notes* 2:1 (1974), 1-6. The broad form deed was the document used by coal speculators to acquire extensive mineral rights in the late 1800s and early 1900s.

Egerton, John. "The King Coal Good Times Blues." *New Times* (February 2, 1978), 26-34. Shows how the quality of life in the coalfields has not improved significantly for many residents despite the recent coal boom.

Eller, Ronald D. "The Coal Barons of the Appalachian South, 1880-1930." *Appalachian Journal* 4 (Spring-Summer 1977), 195-207. Examines the social attitudes of coal owners-operators in the Appalachian coalfields.

________. "Industrialization and Social Change in Appalachia: A Look at the Static Image, 1880-1930." In LJ&A, 36-46. Explains how the persistent poverty of Appalachia has resulted from the particular kind of industrialization that unfolded in the coalfields from 1880 to 1930.

Gaventa, John. "The Amax Record Elsewhere." A study prepared for the Concerned Citizens of Piney by Save Our Cumberland Mountains (SOCM), 1976 (Unpublished). Details effects of Amax Coal Company's actions in states where it mines coal.

________. "Land Ownership and Coal Productivity." In Helen M. Lewis et al. *Coal Productivity and Community: The Impact of the National Energy Plan in the Eastern Coalfields*. Prepared for the Dept. of Energy, 1978. Also in F, 108-18. Examines the effect of ownership on what coal should be mined by whom and on social and economic conditions in coal communities.

________. *Power and Powerlessness: Quiescence and Rebellion in an Appalachian Valley*. Oxford: Clarendon Press; Urbana: Univ. of Illinois Press, 1980. Examines power relationships in Middlesboro, KY, and surrounding rural areas.

Hardt, Jerry. *Harlan County Flood Report*. Corbin, KY: Appalachia-Science in the Public Interest, 1978. Offers evidence that recent flooding was aggravated by strip mining

Harlan Miners Speak: Report on Terrorism in the Kentucky Coal Fields. Prepared by members of the National Committee for the Defense of Political Prisoners. NY: Harcourt, Brace 1932; reprint ed., NY: DaCapo, 1970. Includes a chapter on "Who Owns the Mines." Describes the power and influence of the coal industry in the late 1920s and early 1930s

HarVey, Curtis et al. *Coal and the Social Sciences: A Bibliographical Guide to the Literature*. Lexington: Social Science/Technology Development Group, Univ. of Kentucky, 1979. Up-to-date and useful bibliographical source.

"Housing Crisis in the Coalfields." *United Mine Workers Journal* (February 16-29, 1976). Series of articles which demonstrate the impact of absentee ownership and corporate control on housing in the coalfields.

"Housing in Appalachia." Part I, *MLW* (January 1979) and Part II, *MLW* (February 1979), 20-27. Good survey of housing problems in the coalfields.

Kaufman, Paul. "Poor Rich West Virginia." *New Republic* (December 2, 1972), 12-15. Also in F, 126-28. Illustrates the effect of absentee ownership in WV on the tax structure and the people.

Landy, Marc K. *The Politics of Environmental Reform: Controlling Kentucky Strip Mining*. Baltimore: JHP, 1976. Illustrates the continuing influence of the coal industry in state politics.

Lewis, Helen M. *Coal Productivity and Community: The Impact of the National Energy Plan in the Eastern Coalfields*. Prepared for the Dept. of Energy, 1978. Anticipates the effects of increasing coal production on communities in the eastern coalfields and tries to determine the relationship between social impacts on community and coal miner productivity. Includes community studies from KY, WV, OH, VA, and AL.

Lewis, Helen M.; Johnson, Linda; & Askins, Don, eds. *Colonialism in Modern America: The Appalachian Case*. Boone, NC: Appalachian Consortium Press, 1978. Excellent collection of articles documenting the effects of outside corporate control of Appalachia.

Lewis, Helen M.; Kobak, Sue E.; & Johnson, Linda. "Family, Religion and Colonialism in Central Appalachia or Bury My Rifle at Big Stone Gap." In LJ&A, 113-39. Examines the impact of absentee ownership and control on family and religion in Appalachia.

McAteer, J. Davitt. "You Can't Buy Safety At the Company Store." *Washington Monthly* (November 1972), 7-19. Compares U.S. coal health and safety practices with those in other countries and concludes that corporate ownership in the U.S. is a primary cause of our dismal health and safety record.

Maguire, Kevin. "King Coal in Greene County, Pa.: A Case Study of Domestic Dependency in Appalachia." n.d. (Unpublished). Demonstrates how the dominance of a local coal industry by outside forces has led to poverty, inequality, and dependency.

Munn, Robert F. *The Coal Industry in America: A Bibliography and Guide to Studies*. Morgantown: WVU Library, 1977. Useful introduction to the literature.

Murphy, Thomas. "The Investment Nobody Knows About." *Dun's Review* (April 1965), 40-43, 131-32. Discusses the profits from coal royalties that come from leasing mineral-rich lands to mining companies.

Murray, Francis X. *Where We Agree: Report of the National Coal Policy Project*. 2 vols. Boulder, CO: Westview Press, 1978. Discusses problems associated with the coal industry and offers recommendations.

National Sacrifice Area: Persons Living in This Area Do So At Their Own Risk. Appalachian Alliance, 1979. Information on the impact of absentee ownership on taxation, housing, and health.

Noyes, R., ed. *Coal Resources, Characteristics and Ownership in the USA*. Park Ridge, NJ: Noyes Data Corporation, 1978. Useful statistical source.

"Ralph Nader Letter." In LJ&A, 71-83. Also in F, 119-25. Letter written by Nader in 1973 to the Chairman of the Board of the London-based American Association, Ltd. detailing the exploitive nature of the Association's absentee control of 50,000 acres in the Appalachian coalfields.

Seltzer, Curtis I. "The United Mine Workers of America and the Coal Operators: The Poli ical Economy of Coal in Appalachia." Ph.D. dissertation, Columbia Univ., 1978. Describes and assesses the impact of coal development on the people and resources of the Appalachian coalfields.

Shackelford, Laurel & Weinberg, Bill. *Our Appalachia: An Oral History*. NY: Hill & Wang, 1977. Includes a section on John Mayo, who, by 1910, had spent over 20 years buying mineral rights and selling them to absentee corporations and other speculators.

Simon, Richard M. "The Labor Process and Uneven Development in the Appalachian Coalfield." Forthcoming in the *International Journal of Urban and Regional Research*. Focuses on WV in an effort to develop a model of regional underdevelopment.

Smith, Janet M.; Ostendorf, David; & Schechtman, Mike. *Who's Mining the Farm?* Herrin,Il Illinois South Project, 1978. Though outside Appalachia, this study provides an excellent example of the impact of coal land ownership on agricultural communities.

Sobek, Andrew A. & Streib, Donald. *A Selective Bibliography of Surface Coal Mining and Reclamation Literature*. Vol. 1: Eastern Coal Province. Prepared for the U.S. Dept. of Energy as a part of the Argonne Land Reclamation Program. Springfield, VA: National Technical Information Service, 1977. One of the most recent surveys of this literature.

Tompkins, Dorothy Campbell. *Strip Mining for Coal*. Berkeley: Institute of Governmental Studies, Univ. of California, 1973. Bibliography.

U.S. President's Commission on Coal. *The American Coal Miner: A Report on Community and Living Conditions in the Coalfields*. Wash. DC: USGPO, 1980. Principal volume of th Commission's report. Downplays the impact of absentee corporate ownership.

Walls, David. "Central Appalachia in Advanced Capitalism: Its Coal Industry Structure and Coal Operator Associations." Ph.D. dissertation, Univ. of Kentucky, 1978. Provides an important theoretical perspective along with useful information on the coal industry.

Walls, David; Billings, Dwight; Payne, Mary; & Childers, Joe. *A Baseline Assessment of Coal Industry Structure in the Ohio River Basin Energy Study Region*. Wash. DC: Office of Research and Development, U.S. Environmental Protection Agency, 1979. Includes detailed information on coal production and employment by county, coal land and mineral ownership and projections of coal development.

Weller, Jack. "Appalachia: America's Mineral Colony." *Vantage Point*, No. 2 (circa 1974) Also in LJ&A, 47-55. Describes the various effects of outside ownership.

Williams, John A. *West Virginia and the Captains of Industry*. Morgantown: WVU Library, 1976. Discusses WV history from 1880 to 1913 in terms of 4 corporate leaders who were instrumental in developing and maintaining a "colonial political economy" in that state.

Wright, Warren. "The Big Steal." In LJ&A, 161-75. Study of legal maneuvers through which companies obtained control of east KY land.

Young, Robert A. & Stepko, George, Jr. Ownership and Land Use Constraints Upon the Recoverability of Coal: A Methodology and Test Case. Morgantown, WVU, 1975. Uses Monongalia Co., WV as a study area.

III. RECREATION LAND OWNERSHIP AND SECOND HOME DEVELOPMENT

Alanen, A. R. & Smith, K. E. "Growth Versus No-Growth Issues, with an American Appalachian Perspective." Tijdschrift voor Economische en Sociale Geografie 68:1 (1977), 30-42. Pinpoints sources of growth and no-growth sentiments in Pocahontas, WV, with specific reference to recreational development.

Allan, Leslie; Kudar, Beryl; & Oakes, Sarah L. Promised Lands. Vol. 1: Subdivisions in Deserts and Mountains. NY: INFORM, 1976. Includes chapters on the land subdivision industry and on the impact of subdivisions on the mountain environment.

American Society of Planning Officials. Recreational Lot and Second Home Development: A Manual for Reviewing Impacts. Wash. DC: Council on Environmental Quality, 1976. Handbook for government officials and planners.

________. Subdividing Rural America: Impacts of Recreational Lot and Second Home Development. Wash. DC: USGPO, 1976. Concludes there is a potential for significant adverse impacts from recreational and second home developments. Useful bibliography (127-34).

Appalachian Business Review 2 (Fall 1973). Issue devoted to industrial location and recreation in western NC.

ARC. State and Regional Development Plans in Appalachia. Wash. DC, 1968. Describes the Appalachian Highland region as having "its greatest potential as a recreation, tourism and resource area. . . ."

Bingham, Edgar. "The Impact of Recreational Development on Pioneer Life Styles in Southern Appalachia." Proceedings of the Pioneer America Society, (1973) 59-68. Also in LJ&A, 57-69. Examines the effect of recreational development on Appalachian culture and suggests possible approaches for preserving the culture.

Binkley, Clark & Yale School of Forestry & Environmental Studies. Estimating Recreation Benefits: A Critical Review and Bibliography. Exchange Bibliography 1219. Monticello, IL: Council of Planning Librarians, February 1977. Concern is with quantifying the dollar value individuals ascribe to a new or expanded facility.

Bird, Ronald & Inman, Buis T. Income Opportunities for Rural Families from Outdoor Recreation Enterprises. AER-68. Wash. DC: ERS, USDA, 1965. Argues that many low income areas can benefit from recreational development.

Bosselman, Fred P. In the Wake of the Tourist: Managing Special Places in Eight Countries. Wash. DC: Conservation Foundation, 1978. Examines many facets of tourism and its impact on environmentally sensitive areas in eight countries.

Bosselman, Fred P. & Callies, David. The Quiet Revolution in Land Use Control. Prepared for the Council on Environmental Quality. Wash. DC: USGPO, 1971. Useful discussion of recreational land use control.

Branscome, Jim & Matthews, Peggy. "Selling the Mountains." Southern Exposure 2 (Fall 1974), 122-29. Also in F, 144-51. Presents the case against recreational and second home development.

Brewster, Lawrence F. Summer Migrations of Low Country Planters. Durham: Duke Univ. Press, 1947; reprint ed., NY: AMS Press, 1970. Study of some of the first Appalachian tourists in the early 1800s.

Brown, Richard N., Jr. Economic Impact of Second-Home Communities: A Case Study of Lake Latanka, Pa. ERS-452. Wash. DC: ERS, USDA, 1970. Analysis of the economic impacts generated by one of many second-home communities in the Northeast.

Carey, Omer L. "The Economics of Recreation: Progress and Problems." Western Economics Journal 3 (Spring 1965), 172-81. Examines the various approaches to evaluating the economic benefits of recreation.

Cary, William; Johnson, Molly; Golden, Meredith; & Van Noppen, Trip. The Impact of Recreational Development. A Study of Land Ownership, Recreational Development and Local Land Use Planning in the North Carolina Mountain Region. Durham: North Carolina Public Interest Research Group, 1975. Ownership patterns in 10 NC mountain counties.

Chen, David Y. The Seasonal Tourist Accommodation Industry in Western North Carolina: A Report to Resort Owners/Operators. Greensboro: North Carolina A & T State Univ., 1976. Report on the status of the resort industry in western NC.

Clawson, Marion & Knetsch, Jack L. Economics of Outdoor Recreation. Pub. for RFF. Baltimore: JHP, 1967. Examines the economic and social aspects of outdoor recreation.

Coppock, J. T., ed. Second Homes: Curse or Blessing? Oxford: Pergamon Press, 1977. Offers an international perspective.

Cornett, Judy. "A Preliminary Bibliography of Materials Relating to Recreation and Secon Home Development in the Southern Appalachians." Prepared for the Research and Publi Policy Committee of the Appalachian Studies Conference, 1979 (Unpublished). A usefu bibliography from which some of the sources and annotations in this section are taken.

Cutler, M. Rupert. "The Tragic Story of Magic Mountain." Living Wilderness 29 (Summer 1965), 7-9. A parable (of thinly-disguised Spruce Knob, WV) of the overdevelopment of a once-natural scenic area.

Dobson, Jerome E. "The Changing Control of Economic Activity in the Gatlinburg, Tennessee Area, 1930-1973." Ph.D. dissertation, Univ. of Tennessee, 1975. Land ownership study of the Gatlinburg, TN area. Concludes that "indigenous people are participating les and less in the major benefits of Gatlinburg's economic growth.

Godschalk, David R.; Parker, Francis H.; & Roe, Charles E., eds. Land Development in the North Carolina Mountains: Impact and Policy in Avery and Watauga Counties. Chapel Hill: Dept. of City and Regional Planning, Univ. of North Carolina, June 1975. Documents the impact of recreational land development on the quality of life in 2 Appalachian counties.

Goeldner, C. R. & Dicke, Karen. Bibliography of Tourism and Travel. Research Studies, Reports, and Articles. 3 vols. Boulder: Graduate School of Business Administrati Univ. of Colorado, 1971. Vol. 1: National and Regional; Vol. 2: States; Vol. 3: Foreign.

Gottfried, Robin. "Observations on Recreation-Led Growth in Appalachia." *American Economist* 21 (Spring 1977), 44-50. Examines the pros and cons of recreation development in Appalachia and concludes that serious questions remain as to its benefits.

Hansen, David E. & Dickinson, Thomas E. "Undivided Interests: Implications of a New Approach to Recreational Land Development." *Land Economics* 51 (May 1975), 124-32. Offers an alternative method of developing and marketing recreational properties.

Johns, Irwin R. & Smith, Norman G. *A Profile of Non-resident Recreation Property Owners in an Appalachian County*. MP-589. Maryland Agricultural Experiment Station, March 1967. Focus on the attraction of rural areas to seasonal residents.

Johnson, Hugh A.; Carpenter, J. Raymond; & Dill, Henry W., Jr. *Exurban Development in Selected Areas of the Appalachian Mountains*. ERS-111. Wash. DC: ERS, USDA, April 1963. Focus on northwestern VA and adjacent areas of WV.

Johnson, Hugh A.; Huff, Judith M.; & Csorba, J. J. *Private Outdoor Recreation Enterprises in Rural Appalachia*. ERS-429. Wash. DC: ERS, USDA, 1969. Seeks to determine the extent to which recreation enterprises operating in Appalachia can help meet the growing urban demands for outdoor recreation and provide profitable use of rural resources and employment for rural people.

Klain, Ambrose & Phelan, Dennis M. *Second Homes, Vacation Homes: Potentials, Impacts, and Issues: An Annotated Bibliography*. Exchange Bibliography 839. Monticello, IL: Council of Planning Librarians, 1975. Useful survey of the literature.

Lamm, Joy. "So You Want a Land Use Bill? The Case of the North Carolina Mountain Area Management Act." *Southern Exposure* 2 (Fall 1974), 52-62. Illustrates the influence of the real estate lobby in NC.

Little, Arthur D., Inc. *Tourism and Recreation: A State of the Art Study*. Prepared for Office of Regional Development Planning. Wash. DC: U.S. Economic Development Administration, 1967. Includes a section on the economic impact on a regional or local economy. Bibliography (194-301).

MacCannell, Dean & Meyers, James M. *Planning for Tourism*. Davis: Dept. of Applied Behavioral Science. Univ. of California, Davis, June 1976. Examines the pros and cons of tourism.

Meyers, Phyllis. *So Goes Vermont*. Wash. DC: Conservation Foundation, 1974. Vermont has experienced recreation and land use problems similar to those in Appalachia.

Morris, John. "The Potential of Tourism." In *The Southern Appalachian Region: A Survey*. Ed. by Thomas Ford. Lexington: Univ. of Kentucky Press, 1962. Makes the case for tourism in Appalachia.

Nathan (Robert R.) Associates. *Recreation as an Industry*. 2 vols. Prepared for the ARC and issued as Research Report No. 2. Wash. DC, 1966. Outlines the advantages of recreation in economic development, but points out that most jobs connected with the industry are seasonal and seldom "pay a living wage."

O'Neill, Frank. "Greatest Menace Yet to Southern Mountains." *Southern Voices* (May-June 1974), 73-78. Land development in GA.

Osborn, Howard A. Spruce Knob-Seneca Rocks National Recreation Area: Impact on the Loc Community. Wash. DC: ERS, USDA, May 1976. Examines the income effects of a Nation Recreation Area on 3 WV counties.

Parlow, Anita. The Land Development Rag: The Impact of Resort Development on Two Appalachian Counties, Watauga and Avery in North Carolina. Knoxville: Southern Appalachian Ministry in Higher Education, 1976. Excerpt in LJ&A, 177-98. Informative study of the harmful impacts of recreation development.

Payne, Brian R.; Gannon, Richard; & Ireland, Lloyd C. The Second-Home Recreation Market in the Northeast: A Problem Analysis of Economic, Social and Environmental Impacts Wash. DC: USGPO, 1975. Documents the various impacts of the second-home recreatio market and suggests policy responses and a program of research.

Ragatz (Richard L.) Associates. Future Demands for Recreational Properties. Wash. DC: Urban Land Institute, 1974. Analysis of factors which will influence recreational development for the next 20 years.

________. Recreational Properties in Appalachia: An Analysis of the Markets for Privately Owned Recreational Lots and Leisure Homes. Prepared for the ARC. Springfield, VA: National Technical Information Service, 1974. Market study dealing specifically with recreational properties in the Appalachian states.

"Resort Fever is Changing Face of Appalachia." U.S. News & World Report (April 14, 1980), 58-61. Examines the impact of land developers on Appalachia.

"Rural Impact of Recreation Development." In Planning Frontiers in Rural America. Papers and Proceedings of the Boone Conference, March 16-18, 1975. Wash. DC: USGPO, 1976. Articles focusing on East TN and WV.

Shackelford, Laurel & Weinberg, Bill. Our Appalachia. NY: Hill and Wang, 1977. Includes local reaction to tourist developments in the Asheville, NC area.

Shands, William E. & Woodson, Patricia. The Subdivision of Virginia's Mountains: The Environmental Impact of Recreational Subdivisions in the Massanutten Mountain-Blue Ridge Area, Virginia. Wash. DC: Conservation Foundation, 1974. Report on the environmental impacts of recreational subdivisions in VA.

Sinclair, Robert O. & Meyer, Stephen B. Non-Resident Ownership of Property in Vermont. Bulletin 670. Burlington: Agricultural Experiment Station, Univ. of Vermont, 1972 Analyzes the impact of non-resident ownership of property.

Thomas, Dana L. Lords of the Land: The Triumphs and Scandals of America's Real Estate Barons--from Early Times to the Present. NY: Putnam, 1977. Includes chapters on the Founding Fathers, Astors, railroads, and lucrative farm acres.

Urban Land Institute. Land: Recreation and Leisure. Abstracted from the First Annual Land Use Symposium. Wash. DC, 1970. Chap. 12 details the growth of Beech Mountain, Banner Elk, NC. Good bibliography (91-97).

URS Research Co. Recreation Potential in the Appalachian Highlands: A Market Analysis Prepared for the ARC. Wash. DC, 1971. Argues for increased recreation development in Appalachia.

U.S. Dept. of Interior, Bureau of Outdoor Recreation. A Report on Outdoor Recreation Demand, Supply and Needs in Appalachia. Prepared for the ARC. Wash. DC, 1967. Lists "positive" values of recreation.

Waip, Neil. "The Market for Recreation in the Appalachian Highlands." Appalachia 4 (November-December 1970), 27-36. Describes 23 recreation complexes in Appalachia and discusses the potential recreational market in the region.

Whisnant, David. Modernizing the Mountaineer: People, Power, and Planning in Appalachia. NY: Burt Franklin, 1980. Includes a discussion on the ARC's recreation and tourism programs (167-73).

IV. FARM LAND OWNERSHIP, TAXATION, AND THE PLIGHT OF THE SMALL FAMILY FARM

A. Farm Land Ownership and Taxation

This section includes works on rural land ownership at a regional, state, and local level. Works on national land ownership are listed in I.B. Also included are works analyzing the foreign ownership of rural land, black land ownership and taxation of agricultural land.

Atkinson, Glen W. "The Effectiveness of Differential Assessment of Agricultural and Open Space Land." American Journal of Economics and Sociology 36 (April 1977), 197-204. Finds the current laws have little impact on land use.

Barlowe, Raleigh & Timmons, John F. Farm Ownership in the Midwest. Research Bulletin 361. Iowa Agricultural Experiment Station, June 1949. Examines who owns the farms in the midwest, how they were acquired and the form in which they are held.

Bird, Richard M. Taxing Agricultural Land in Developing Countries. Cambridge: Harvard Univ. Press, 1974. Provides some useful insights relevant to the U.S. situation.

Boles, Donald E. & Rupnow, Gary. "Local Governmental Functions Affected By the Growth of Corporate Agricultural Land Ownership: A Bibliographic Review." Western Political Quarterly 32 (December 1979), 467-78. Helpful review of the literature.

Browne, Robert S. Only Six Million Acres: The Decline of Black Owned Land in the Rural South. NY: Black Economic Research Center, 1973. Examines the major decline in black owned land.

Buckeye Hills Resource Conservation and Development Project. Land Ownership Study 1976: Belmont-Monroe-Morgan-Noble-Washington Counties, Ohio. Caldwell, OH, 1976. Documents the presence of a large number of non-resident landowners.

Carlin, Thomas A. & Woods, W. Fred. Tax Loss Farming. ERS-546. Wash. DC: ERS, USDA, April 1974. Examines the complexities of the issue.

Conklin, H. E. & Bryant, W. R. "Agricultural Districts: A Compromise Approach to Agricultural Preservation." American Journal of Agricultural Economics 56 (August 1974), 607-13. Examines NY's experience with agricultural districts as a means of preserving farm land.

Cotner, Melvin L. Land Use Policy and Agriculture: A State and Local Perspective. ERS-650. Wash. DC: ERS, USDA, February 1977. Argues that the U.S. is not running out of farm land.

Crowe, Kenneth C. America for Sale. Garden City, NY: Doubleday, 1978. Journalistic account of the recent surge of foreign investments in U.S. land.

Dangerfield, Jeanne. "Sowing the Till: A Background Paper on Tax Loss Farming." Congressional Record 119 (May 16, 1973), 9247-55. Sets forth the arguments against tax loss farming.

Dorgan, Byron. The Progressive Land Tax: A Tax Incentive for the Family Farm. Wash.DC: Conference on Alternative State and Local Policies, 1978. One of the best of a number of studies on property tax reform which would benefit the family farmer.

Gardner, Delworth. "The Economics of Agricultural Land Preservation." American Journal of Agricultural Economics 59 (December 1977), 1027-36. Concludes that agricultural land retention legislation is the wrong thing at the wrong time. Contends that it has not been adequately demonstrated that more U.S. land than the market will make available will be needed to produce food in the next decade.

Gloudemans, Robert J. Use-Value Farmland Assessments: Theory, Practice and Impact. Chicago: International Association of Assessing Officers, 1974. In-depth analysis of the key issues.

Hady, Thomas F. & Sibold, Ann G. State Programs for the Differential Assessment of Farm and Open Space Land. AER-256. Wash. DC: ERS, USDA, April 1974. Short discussion of issues followed by a complete listing and description of state statistics as of 1973.

Hoffsommer, Harold, ed. The Social and Economic Significance of Land Tenure in the Southwestern States. A Report of the Regional Land Tenure Research Project. Chapel Hill: Univ. of North Carolina Press, 1950. Measures the relationship between the tenure status of the family farm and its economic and social performance.

Inman, Buis T. & Fippin, William H. Farm Land Ownership in the United States. MP-699. Wash. DC: USDA, December 1949. Includes land in farms by major types of owners and extent of holdings by individual owners.

IAAO. Property Tax Incentives for Preservation: Use-Value Assessment and the Preservatic of Farmland, Open Space, and Historic Sites. Proceedings of the 1975 Property Tax Forum. Chicago, 1975. Nine essays examine the rationale for existing use-value assessment programs as well as their effectiveness in achieving their objectives.

Johnson, Bruce B. Farmland Tenure Patterns in the United States. AER-249. Wash. DC: ERS, USDA, February 1974. Detailed examination of farmland ownership and control based on 1969 census data.

Keene, John. Untaxing Open Space: An Evaluation of the Effectiveness of Differential Assessment of Farms and Open Space. Prepared for the Council on Environmental Quality. Wash. DC: USGPO, 1976. Study of 42 state laws that give preferential tax treatment to agricultural land.

Kolesar, John & Scholl, Jaye. Misplaced Hopes, Misspent Millions: A Report on Farmland Assessment in New Jersey. Princeton, NJ: Center for Analysis of Public Issues, 197 Highly critical of use-value assessment. Estimates a tax loss of $48 million per year with no return. Contends that outright speculators control 10% of the land in the program.

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V. GOVERNMENT OWNERSHIP OF LAND, WITH AN EMPHASIS ON THE NATIONAL FORESTS

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Shepherd, Jack. *The Forest Killers: The Destruction of the American Wilderness*. NY: Weybright and Talley, 1975. Muckraking account of how private interests, especially lumber companies, have been allowed to exploit the national forests.

Smith, Darrell H. *The Forest Service: Its History, Activities and Organization*. Wash.DC: Brookings Institution, 1930; reprint ed., NY: AMS Press, 1973. General history of the USFS.

Spurr, Stephen H. *American Forest Policy in Development*. Seattle: Univ. of Washington Press, 1976. Lectures on how USFS policy should evolve.

Steen, Harold K. *The U.S. Forest Service: A History*. Seattle: Univ. of Washington Press, 1976. One of the more recent and informative histories of the USFS. Includes a bibliographical essay (338-46).

Stoddard, Charles H. *The Small Private Forest in the United States*. Pub. for RFF. Baltimore: JHP, 1961. Examines the problem of the unproductive small private forests and makes suggestions for increasing their productivity.

U.S. Congress. Senate. Committee on Interior and Insular Affairs, Subcommittee on Public Lands. *Clearcutting on Federal Timberlands: A Report*. Wash. DC: USGPO, 1972. Contains valuable information on the clearcutting issue.

________. *"Clearcutting" Practices on National Timberlands*. 3 Parts. Hearings, 92nd Congress, 1st session. Wash. DC: USGPO, 1971. Useful summary of the opposing views in the clearcutting debate.

USDA. *Message from the President of the United States Transmitting a Report of the Secretary of Agriculture in Relation to the Forests, Rivers, and Mountains of the Southern Appalachian Region*. Wash. DC: USGPO, 1902. Makes the case for the government purchase of forest lands in Southern Appalachia.

USDA, USFS. *Guide for Managing the National Forests in the Appalachians*. 2nd ed. Wash. DC, 1973. Useful overview of national forests in Appalachia.

________. *The Principal Laws Relating to Forest Service Activities*. rev. ed. Agricultural Handbook No. 453. Wash. DC, September 1978. Useful compendium of USFS legislation.

U.S. General Accounting Office. *The Federal Drive to Acquire Private Lands Should Be Reassessed*. Wash. DC: USGPO, December 1979. Highly critical of government acquisition policies.

Widner, Ralph K., ed. *Forests and Forestry in the American States: A Reference Anthology* Wash. DC: National Association of State Foresters, 1968. Contains many historical articles on forest conservation, state forestry and state forestry organizations.

Winters, Robert K., ed. *Fifty Years of Forestry in the U.S.A*. Wash. DC: Society of American Foresters, 1950. Nineteen essays on progress in American forestry.

Williams, Ellis T. "Emerging Patterns of Forest Tax Legislation." *Agricultural Finance Review* 32 (August 1971), 15-21. Summarizes the legislative trends in the property taxation of forest land and tenure.

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VI. THE DAM MENTALITY--FEDERAL AND PRIVATE DAM BUILDERS

American Rivers Conservation Council. *How to Save Your River: A Citizen's Guide to Water Projects*. Wash. DC, n.d. Also in F, 201-05. Brief guide about how citizens can organize to halt a destructive water project proposed by the Corps.

American Rivers Conservation Council & the Environmental Policy Center. "95 Theses." Wash. DC, May 1974. Call for reform in the Corps and the Bureau of Reclamation.

Berkman, Richard L. & Viscusi, W. Kip. *Damming the West: Ralph Nader's Study Group Repo on the Bureau of Reclamation*. NY: Grossman, 1973. Highly critical analysis of the destructive practices of this agency.

Blackwelder, Brent. Benefit Claims of the Water Development Agencies: The Need for Continuing Reform. Wash. DC: Environmental Policy Institute, 1976. Addresses several of the major areas of controversy surrounding the water resources projects of the Corps.

________. Citizens' Guide to the New Carter Water Policy. Wash. DC: Environmental Policy Center, 1978. Critique of the new national water policy announced in June 1978.

Blackwelder, Brent & Carlson, Peter. An Analysis of the Stonewall Jackson Lake Project of the U.S. Army Corps of Engineers. Wash. DC: Environmental Policy Center, 1979. Highly critical evaluation of Corps' actions in this WV water project.

Blanton, Bill. "Not by a Dam Site: Brumley Gap, Virginia--How One Community Fought Back." Southern Exposure (Winter 1979), 98-106. Good summary of citizen resistance to Appalachian Power Company's attempt to build a pumped storage facility at Brumley Gap, VA.

Branscome, Jim. The Federal Government in Appalachia. NY: Field Foundation, 1977. TVA section discusses how the agency has removed over 125,000 people from their land to build dams.

Delaware Valley Conservation Association. In Defense of Rivers. Stillwater, NJ, n.d. Up-to-date guide for fighting destructive water projects.

Douglas, William O. "The Corps of Engineers: The Public Be Damned." Playboy (July 1969), 143, 182-88. Critical discussion of the Corps by a former Supreme Court Justice.

Drew, Elizabeth. "Dam Outrage: The Story of the Army Engineers." Atlantic (April 1970), 51-62. Describes how the Corps wins over $1 billion a year from Congress to build projects that frequently serve only the narrowest interests and too often inflict the wrong kinds of change on the environment.

Eckstein, Otto. Water-Resources Development. The Economics of Project Evaluation. Cambridge: Harvard Univ. Press, 1961. Analyzes the procedures for measuring benefits and costs employed by the Bureau of Reclamation and the Corps. Assumes that judgments about changes in the distribution of income and about political and social objectives must be left to Congress and that the national interest is best served by benefit-cost analysis which reveal each project's impact on the total real national income to be enjoyed by each county.

Ferejohn, John A. Pork Barrel Politics: Rivers and Harbors Legislation, 1947-1968. Stanford: Stanford Univ. Press, 1974. Focuses on Congress' role in the Corps' appropriations process and the distribution of its projects.

Field, Donald R.; Barron, James C.; & Long, Burl F.,eds. Water and Community Development: Social and Economic Perspectives. Ann Arbor, MI: Ann Arbor Science Pubs., 1974. Explores the role of water resources in contributing to community development.

Fitzsimmons, Stephen J. Man and Water: A Social Report. An Abt Associates Study in Applied Social Research. Boulder, CO: Westview Press, 1977. Examines the relationship between man's social-psychological needs and his water resources development.

Gaillard, Frye. "Fear of a Final Solution." Race Relations Reporter 5 (March 1974), 13-14. Concludes that the methods and motives of the Corps and others raise the prospect of the forced relocation of mountain people to allow undisturbed access to natural resources.

Garrison, Charles B. "A Case Study of the Local Economic Impact of Reservoir Recreation." Journal of Leisure Research 6 (Winter 1974), 7-19. Challenges the belief that Corps' dams and reservoirs add to regional productivity.

Giefer, Gerald J. Sources of Information in Water Resources: An Annotated Guide to Printed Materials. Port Washington, NY: Water Information Center, 1976. Annotates over 1100 titles found useful for reference purposes in the water resources field.

Haveman, Robert H. The Economic Performance of Public Investments: An ExPost Evaluation of Water Resources Investments. Pub. for RFF. Baltimore: JHP, 1972. Presents a general framework for evaluating the direct benefits and costs of a water project after it is completed.

________. Water Resources Investment and the Public Interest. Nashville: Vanderbilt Uni Press, 1965. Analysis of Corps expenditures in 10 southern states.

Haveman, Robert H. & Hamrin, Robert D., eds. The Political Economy of Federal Policy. NY Harper & Row, 1973. Includes several articles critical of the Corps.

Haveman, Robert H. & Krutilla, John. Unemployment, Idle Capacity, and the Evaluation of Public Expenditures: National and Regional Analyses. Pub. for RFF. Baltimore: JHP, 1968. Examines the adequacy of benefit-cost analysis for evaluating water projects during periods of less than full employment in both the national and regional economies. Presents a methodology for tracing the incidence of water development resource demands generated by regions and sectors of the national economy.

Holmes, B. H. History of Federal Water Resources Programs and Policies, 1961-1970. MP-1379. Wash. DC: USDA, 1979. Useful summary.

Holt, William S. The Office of the Chief of Engineers of the Army: Its Non-Military History, Activities and Organization. Baltimore: JHP, 1923; reprint ed., NY: AMS Press, 1974. Early history of the Corps.

Howe, Charles W. Benefit-Cost Analysis for Water System Planning. Water Resources Monograph No. 2. Wash. DC: American Geophysical Union, 1971. Sets forth some of th basic elements of a broad benefit-cost approach to water resources planning.

Jacobstein, J. Myron & Mersky, Roy M. Water Law Bibliography, 1847-1965: Source Book on U.S. Water and Irrigation Studies--Legal, Economic and Political. Silver Spring, MD: Jefferson Law Book Co., 1966. Updated through 3 supplements--1966-67, 1968-1973, and 1974-1977.

Johnson, Leland R. "A History of the Operations of the Corps of Engineers, United States Army, in the Cumberland and Tennessee River Valleys." Ph.D. dissertation, Vanderbil Univ., 1972. Includes useful information on the extent of Corps activities in this section of Appalachia.

"Kentucky Rivers Coalition." MLW (November 1976), 26-27. Describes the activities of this important citizen group.

Laycock, George. The Diligent Destroyers. Garden City, NY: Doubleday, 1970. Includes a section on the Corps.

Leopold, Luna B. & Maddock, Thomas, Jr. The Flood Control Controversy: Big Dams, Little Dams and Land Management. Sponsored by the Conservation Foundation. NY: Ronald Pre 1954. Examines flood control programs and controversies involving the Corps, Forest Service and Dept. of Agriculture.

Maass, Arthur. Muddy Waters: The Army Engineers and the Nation's Rivers. Cambridge: Harvard Univ. Press, 1951; reprint ed., NY: DaCapo, 1974. Provides a history of the Corps.

Marine, Gene. America the Raped: The Engineering Mentality and the Devastation of a Continent. NY: Simon & Schuster, 1969. Includes a discussion of several Corps projects.

Massey, David. "Over a Barrel: Southern Waterways and the Army Corps of Engineers." Southern Exposure 8 (Spring 1980), 92-100. Excellent critique of Corp projects in the South during the last decade.

Matthiessen, Peter. "How to Kill a Valley." New York Review of Books (February 7, 1980), 31-36. Good critique of TVA's Tellico dam project.

Mazmanian, Daniel & Nienaber, Jeanne. Can Organizations Change? Environmental Protection, Citizen Participation and the Corp of Engineers. Wash. DC: Brookings Institution, 1979. Examines how the Corps responded to pressures for greater public involvement and environmental awareness in its decision-making structure.

Morgan, Arthur E. Dams and Other Disasters: A Century of the Army Corps of Engineers in Civil Works. Boston: Porter Sargent Publisher, 1971. Very critical account of the Corps and its abuse of the environment.

Napier, Ted L. An Analysis of the Social Impact of Water Resource Development and Subsequent Forced Relocation of Population Upon Rural Community Groups: An Attitudinal Study. ESS513. Columbus: Dept. of Agricultural Economics & Rural Sociology, Ohio State Univ., 1974. Examines social impacts within several communities in OH and WV which had recently experienced extensive water development activity.

Parfit, Michael. "The Army Corps of Engineers: Flooding America in Order to Save It." New Times (November 12, 1976), 25+. Concludes that the Corps "resembles a giant bulldozer out of control, burying villages, disfiguring the landscape and possibly bringing closer the very floods it is meant to prevent."

Reuss, Henry S. "Needed: An About-Face for the Army Corps of Engineers." Reader's Digest (November 1971), 129-32. A congressman criticizes the Corps.

Rosenbaum, Walter A. The Politics of Environmental Concern. 2nd ed. NY: Praeger, 1977. Includes a chapter on the politics of water resources that emphasizes the activities of the Corps.

Saving Rivers. Summary of workshops of the 1978 Conference on Rivers, Dams, and National Water Policy, Wash. DC. Wash. DC: Environmental Policy Center, 1978. Useful collection which examines relevant legislation and explores ways to oppose destructive water projects.

Schoenbaum, Thomas J. The New River Controversy. Winston-Salem, NC: John F. Blair, 1979. Examines the defeat of Appalachian Power Company's effort to build a pumped storage facility along the New River in VA and NC.

Tennessee-Tombigbee Background Report. Wash. DC: Coalition for Water Project Review, March 1979. Summary of the issues involved in this highly controversial water project.

Whisnant, David. Modernizing the Mountaineer: People, Power, and Planning in Appalachia. NY: Burt Franklin, 1980. Includes a discussion on TVA's dam building philosophy.

Wilkins, Bryan. "Tennessee-Tombigbee: New American Flush." Mountain Review 3 (September 1977), 1-5. Critical account of this Corps' project.

VII. LAND REFORM PROPOSALS AND STRATEGIES

This is a brief section for several reasons. First, many of the works listed in the above sections include reform proposals and, with just a few exceptions, these works are not repeated here. Second, land reform has not been a serious issue in the U.S. for many years and the literature related to this issue is woefully inadequate. Finally, except for a few bibliographies and general surveys, works on land reform efforts in other nation are not included here.

Barnes, Peter, ed. The People's Land: A Reader on Land Reform in the United States. Emmaus, PA: Rodale Press, 1975. Significant collection of articles on land reform issues.

Barnes, Peter & Casalino, Larry. Who Owns the Land? A Primer on Land Reform in the USA. Berkeley, CA: Center for Rural Studies, 1972. Focus on various land reform alternatives

Belden, Joe; Edwards, Gibby; Guyer, Cynthia; & Webb, Lee, eds. New Directions in Farm, Land and Food Policies: A Time for State or Local Action. Wash. DC: Agricultural Project, Conference on Alternative State and Local Policies, 1978. Excellent summary of reform efforts at the state and local level.

Bruchey, Stuart. "The Twice 'Forgotten' Man: Henry George." American Journal of Economics and Sociology 31 (April 1972), 113-38. Examines the relation of George's thoughts on the land issue to his times and our own.

Center for Science in the Public Interest. From the Ground Up: Building a Grass Roots Food Policy. Wash. DC, 1976. Action handbook for people who want to reform food policies at the city, state, and county levels.

Chambers, H. Harold, Jr. Citizen Participation in the Battle Against Strip Mining Under the West Virginia Surface Mining and Reclamation Act of 1971. Charleston, WV: Appalachian Research & Defense Fund, 1975. Handbook for fighting strip mining.

Citizens' Energy Project. "Land Use Options for Citizens Impacted by Appalachian Coal Development." Wash. DC, n.d. Considers several legal options available to citizens and local and state governments to respond to some of the adverse land use impacts brought about by coal development. Focuses on WV, KY and TN.

Constant, Florence. Land Reform: A Bibliography. Cambridge, MA: Center for Community Economic Development, 1972. 9 page bibliography.

Corty, Floyd L. "Are We Headed for Land Reform in the United States?" Land Economics 38 (August 1962), 270-73. Concludes that the possibilities of land reform in the U.S. are remote.

Curie, Robert F. "Columbia Gas Ordered to Pay Higher Taxes." MLW (April 1979), 3-6. Also in F, 222-25. Describes how a local citizens' group won a major victory against a large corporate landholder.

Dorner, Peter. *Land Reform and Economic Development*. Baltimore: Penguin Books, 1972. Treats land reform as an integral part of the strategy and policy of economic development. Useful bibliography (149-57).

Faux, Geoffrey. "Reclaiming America." *Working Papers* 1 (Summer 1973), 31-42. Frequently cited article on land reform in the U.S.

Fisher, Steve & Foster, Jim. "Models for Furthering Revolutionary Praxis in Appalachia." *Appalachian Journal* 6 (Spring 1979), 171-96. Includes a section on resistance movements formed around the land issue.

Food and Agriculture Organization of the United Nations, Documentation Centre. *Land Reform: Annotated Bibliography of FAO Publications and Documents (1945-April 1970)*. NY: Unipub, Inc., 1971. Valuable reference for non-U.S. sources.

________. *Land Reform, Land Settlement and Cooperatives*. Issued semi-annually. No. 1 (1968) - present. A medium for dissemination of information and views on land reform and related subjects.

Fritsch, Albert J. *The Contrasumers: A Citizen's Guide to Resource Conservation*. NY: Praeger, 1974. Examines a set of conservation strategies.

George, Henry. *Progress and Poverty*. NY: Robert Schalkenbach Foundation, 1965 (orig. 1887). Major work of this advocate for the nationalization of the value of land.

Guitar, Mary Anne. *Property Power: How to Keep the Bulldozer, the Power Line and the Highwaymen Away From Your Door*. Garden City, NY: Doubleday, 1972. Helpful handbook for organizing around land issues.

Hardt, Jerry (with Diane Sternberg, Linda Kravitz & Dave Kirkpatrick). *The Feasibility and Design of a Central Appalachian Land Bank*. Prepared for ARC. Berea, KY: Human/Economic Appalachian Development Corporation, 1979. Makes the case for a land bank and sets forth a strategy for establishing one in Central Appalachia.

"Housing Alternative." *Elements* (February 1977), 8-10. Argues for the public acquisition of land for houses.

Illinois South Project. *A Handbook on Coal Leasing and Landowners Organizations*. Carterville, IL, 1976. A handbook for local citizens. Makes recommendations for limiting the coal mining of agricultural land.

International Independence Institute. *The Community Land Trust: A Guide to a New Model for Land Tenure in America*. Cambridge, MA: Center for Community Economic Development, 1972. Summarizes the key issues in the land trust movement.

Jacoby, Erich H. in collaboration with Charlotte F. Jacoby. *Man and Land: The Essential Revolution*. NY: Knopf, 1971. Describes current conditions of the man-land relationship and makes the case for land reform. Includes a useful bibliography (372-91).

Kahn, Si. *How People Get Power: Organizing Oppressed Communities for Action*. NY: McGraw-Hill, 1970. Focus on rural communities.

King, Russell. *Land Reform: A World Survey*. London: G. Bell & Sons, 1977. Discussion of land reform in Latin America, Asia, Africa, and the Middle East.

Landau, Norman J. & Rheingold, Paul D. The Environmental Law Handbook. NY: Friends of the Earth/Ballentine Books, 1971. Legal action simplified for citizen groups.

"Land Reform." Citizens' Appalachia No. 12 (January 1979). Summary of land reform issues in Appalachia.

Little, Charles E. Stewardship. NY: Open Space Institute, 1965. Account of how land philanthropy benefits both the donor and his community.

Love, Sam, ed. Earth Tool Kit: A Field Manual for Citizen Activists. NY: Pocket Books, 1971. Includes useful suggestions for organizing around land issues.

McHarg, Ian. Design With Nature. Garden City, NY: Doubleday, 1969. Classic work whose ideas have been used to form a philosophy of land use where planners allow nature to dictate the design.

Rural America. Toward a Platform for Rural America. Wash. DC, 1978. Includes a summary of key land issues and proposes a number of reforms.

Schumacher, E. F. Small Is Beautiful: Economics as if People Mattered. NY: Perennial Library, 1973. Well-known statement of the importance of small-scale industrial and agricultural production.

Strong, Ann L. Land Banking--European Reality, American Prospect. Baltimore: JHP, 1979. Examines the European example and speculates on the potential for land banking in the U.S.

Tai, Hung-Chao. Land Reform and Politics: A Comparative Analysis. Berkeley: Univ. of California Press, 1974. Political analysis of land reform in 8 developing countries.

Tuma, Elias H. Twenty-Six Centuries of Agrarian Reform: A Comparative Analysis. Berkel Univ. of California Press, 1965. Provides an interesting and useful classification of land reform movements.

Warriner, Doreen. Land Reform in Principle and Practice. Oxford: Clarendon Press, 1969. Designed as a general introduction.

Wellstone, Paul D. How the Rural Poor Get Power: Narrative of a Grass-Roots Organizer. Amherst: Univ. of Massachusetts Press, 1978. Examines strategies for organizing that are relevant to bringing people together around land issues.

Whyte, William H. The Last Landscape. NY: Doubleday, 1968. Readable history of the evolving techniques being used to save the land.

You Can't Put It Back. A West Virginia Guide to Strip Mine Opposition. Fairmont, WV: Mountain Community Union, 1976. Handbook for opposing strip mining.

Appendix 16

END

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